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Some Points ON THE ETIOLOGY, PROGNOSIS, AND TREATMENT OF GRAVES'S DISEASE.*

WITH PARTICULAR REFERENCE TO THE ADRENAL GLANDS AND THE VALUE OF READ'S FORMULA.

BY

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IT is not my intention to attempt to deal fully with the several aspects of Graves's disease, but rather to touch on certain points in etiology, prognosis, and treatment which in my opinion are worthy of some consideration.

The subject is one of which our knowledge is steadily growing, and about which there is much variation in opinion and practice. This is as it should be, for there is plenty of scope for trial and observation in many directions in this disorder at the present time, but little excuse for dogmatic assertions or rule-of-thumb procedures.

ETIOLOGY.

A tenet which has materially delayed advance in our understanding of Graves's disease is that hyperthyroidism is a sufficient explanation. The conception is a simple one, and suggests a simple remedy. If the symptoms and effects are due to hyperthyroidism, let us cripple the thyroid in some way or other, and necessarily the symptoms must abate. Such a simple conception, entrenched as it is in the textbooks by the use of Graves's disease and hyperthyroidism as synonymous terms, we know now is untenable, and must be modified in various ways. The discovery and preparation of a product of thyroid activity—thyro-iodin or thyroxin—led to its being regarded as the peccant substance to excess of which the symptoms are due, but Williamson and Pearse[1] have shown that disturbance of the iodo-colloid function has only an indirect relation to the thyro-toxicosis. These workers have demonstrated that the thyroid gland has two distinct functional activities—one the production of thyro-iodin, the other of a secretion—and that it is this latter which is directly related to the thyro-toxicosis of Graves's disease. Even so, the question we must answer before we can approach the preventive medicine of Graves's disease or remain satisfied with its present treatment is: "Why is the secretory activity enhanced?" When the correct answer to that question is provided the present methods of treatment, directed towards destroying the activity of the gland by local means, will be a subject chiefly of historical interest. I do not wish to attempt to belittle the present-day value of such methods, but I feel that it should be our aim to minimize the need for their employment, which will assuredly be attained when we can explain the over-production of thyroid secretion. This part of the field of etiology is, then, well worthy of exploration, and one likely to yield results of the greatest practical value.

Stimulation of Thyroid Activity.

It is generally agreed now that the thyroid reacts to toxic factors, as well as to sympathetic stimulation, by increasing its functional activity. Another stimulus arises from the sex glands in the female, probably from the uterus, for there is slight but noticeable enlargement of the gland at puberty, during pregnancy, and even during menstruation in many subjects; whilst with the termination of the climacteric the opposite is prone to occur, the gland shrinking and perhaps becoming so insufficient as to permit of the development of myxoedema. Perhaps this extra duty of the thyroid in the female may explain the greater incidence of Graves's disease in women, especially during the child-bearing period.

Despite the careful work of McCarrison and others, the conception of the thyroid as an antitoxic gland was long in gaining credence, though it seems now to be acknowledged. I believe this activity to be of great importance in the etiology of Graves's disease. Like others, I have been especially impressed with the frequency of tonsillar sepsis in my experience. This has led me to make particular inquiry and investigation into the point in my last 50 cases of Graves's disease. In 22, or 44 per cent., I obtained a definite spontaneous history of severe recurrent sore throats or quinsies. In 8 of these (16 per cent.) an attack occurred while the patients were in the wards. It must be emphasized that simple sore throats were disregarded in these figures, and only severe and recurrent tonsillitis or quinsies were considered.

Stimulation of the thyroid gland by toxins, either acting alone or in combination with other exciting influences, seems to me to be among the most important causes of thyro-toxicosis or Graves's disease. It is tempting to suppose that the effect of local sepsis, such as that of the tonsils, is to create a demand for the iodo-colloid secretion, but that by this demand the whole gland is stimulated, the true secretion being also increased. It is this excess of true secretion which provides the symptoms of Graves's disease. Bearing upon these points it must not, however, be forgotten that hyperplasia of the secretory tissue of the thyroid seems to hold in check the development of iodo-colloid, for removal of some of the hyperplastic tissue is followed by a re-accumulation of iodo-colloid in the alveolar spaces (Williamson and Pearse).

The Adrenals in Graves's Disease.

The part played by the adrenal glands in Graves's disease cannot be ignored, but is not easy to assess. Psychical causes, such as worry, excitement, mental stress, and fright, have long been recognized as precursors. Moreover, the clinical picture of the disease is the very presentment of fear—the starting eyes, the flushing, the tachycardia, the tremor, even the diarrhoea and the hyperglycaemia, together delineate the features of fear. But fear and the preparation for fight or flight we believe to be intimately connected with activity of the adrenal gland, the hormone of the medulla of which hurries up the heart, braces up the blood vessels, and mobilizes sugar for immediate effort (Cannon). When Graves's disease begins abruptly, following a period of excitement and alarm such as a motor accident, it is difficult to exclude the adrenals in its production, for the increase of adrenaline which arises, by stimulating the sympathetic system, must provoke also increased thyroid secretion. During the war one saw many examples of men who, after exposure to danger, presented a picture which during time of peace one had been accustomed to recognize as mild Graves's disease, for they showed tremor, tachycardia, flushing, slight staring of the eyes, with retraction of the upper lids and visible sclerotics below them. In most instances these symptoms subsided quite quickly, being gone in a few hours or days, but occasionally true Graves's disease followed and persisted. There was, I believe, a notable increase in Graves's disease in London during the war period, which has been ascribed to the air raids (Langdon-Brown). If we accept the modern physiological explanation of the reaction to fear, the prominent part played by the suprarenals in the inception of Graves's disease in these cases can hardly be denied.

A more difficult question is as to how long this adrenal activity persists, and how far it contributes to the picture of the developed disease, for it must not be forgotten that administration of thyroid alone in excessive doses is capable of producing nearly all the symptoms. Yet it is reasonable to infer that with overaction of the thyroid there is accompanying overaction of the adrenals, for thyroid secretion stimulates the sympathetic, which in turn stimulates the adrenals. Assuming that my contention is right that suprarenal activity precedes that of the thyroid in response to psychical disturbances in certain cases of Graves's disease, it is easy to see how a vicious circle may be set up. The outpouring of adrenaline stimulates the sympathetic, which in turn stimulates the thyroid and the suprarenal itself, whilst the increased thyroid secretion for its part stimulates the adrenals still more.

* Read before the Hampstead Division of the British Medical Association, March 14th.

Experimental Study of the Suprarenal Gland.

There are several interesting observations and experiments which bear upon this problem. W. Cramer[2] points out that the suprarenal gland is unusual in that its own secretion stimulates it to further activity through the intermediation of the sympathetic, a process which, unchecked, would inevitably lead to exhaustion of the gland. He finds that injection of adrenaline or of whole adrenals in a mouse produces characteristic changes in the adrenal medulla, which he believes effect a control of the gland. The changes in the gland are an apparent hyperplasia of the deeper part of the cortex, at the expense of the medulla. Hoskins[3] and Herring[4] found enlargement of the suprarenal cortex as the result of prolonged feeding with thyroid. Possibly, as Cramer suggests, an explanation of Graves's disease is to be found in a breakdown of this controlling mechanism.

The experiments of Marine and Baumann[5] are especially suggestive. After suprarenalectomy, or after freezing the adrenal cortex with ethyl chloride in rabbits, they found that 88 per cent. (of 31 rabbits) showed markedly increased heat production (which corresponds to a raised basal metabolic rate) for months, loss of weight, and "a picture resembling the symptom-complex of exophthalmic goitre." These results did not occur if the thyroid gland was previously removed—an observation strongly indicating a controlling action of the suprarenal cortex against thyroid secretion and its failure in Graves's disease.

McCarrison has shown that inanition provokes hypertrophy of the suprarenal cortex. May not this hypertrophy be a protective mechanism to control metabolic activity by opposing the thyroid? Jaffe[6] has shown that suprarenalectomy causes rapid enlargement of the thymus, and we know that thymic hyperplasia is a constant accompaniment of Graves's disease. Marine states that thyroidectomy hastens involution of the thymus, whilst suprarenalectomy delays it.

Shapiro[7] has given a glycerin extract of ox suprarenal cortex in cases of Graves's disease, and records considerable benefit, especially upon the asthenia, dysmenorrhoea, diarrhoea, nutrition, heat production, tachycardia, and blood pressure. He believes that the suprarenal cortex exerts an inhibitory or regulating control over the thyroid, and that its functional insufficiency plays a fundamental part in the development of Graves's disease. He points out that suprarenal cortical injury and Graves's disease have many features in common, for both show increased metabolism and appetite, thyroid hyperplasia, lymphoid hypertrophy, including that of the thymus, asthenia, increased sexual activity, hypersensitiveness to toxins and drugs, and increased peristalsis. Marine's work on the high metabolic rate after excision of the suprarenals is not entirely confirmed by Scott,[8] and Bornstein and Holm,[9] who found much increased ventilation of the lungs, to which they ascribe the results.

Finally, Obregia[10] has treated Graves's disease with glycerin extract of whole suprarenal glands of sheep, pigs, or calves. He records rapid amelioration of the condition, and states that all the patients have recovered. With adrenaline alone by the mouth he obtained improvement, but this was less pronounced than with the whole gland.

A clinical feature of interest in regard to the suprarenal cortex being a possible factor in Graves's disease is the pigmentation. In Addison's disease the pigmentation is generally regarded as due to cortical rather than to medullary defect, and a somewhat similar pigmentation occurs in Graves's disease. Feeding of birds with thyroid, on the other hand, causes disappearance of pigment.

To sum up the etiological part of my remarks there is, I think, good reason to believe that:

1. Hyperthyroidism is an incomplete definition of Graves's disease.

2. An important provoking antecedent is local sepsis, especially of the tonsils.

3. The suprarenal glands play an important part in the etiology and clinical manifestations.

4. There is a good deal of evidence to show that suprarenal cortex exerts a controlling influence on thyroid activity, and that its failure to control is an important factor.

PROGNOSIS.

Estimation of the severity of a case and a forecast of its probable outcome is based best on the assessment of many factors, and should not, in my opinion, depend entirely on the basal metabolic rate. The degree of tachycardia, the pulse pressure, the cardiac rhythm, the severity of nervous symptoms, the degree of general weakness, the existence or not of diarrhoea are all factors of great importance. The age of the patient is another pertinent consideration, for with the intervention of the menopause amelioration is to be expected. Occupying a prominent, perhaps the most prominent, position is the value of the basal metabolic rate, but it should be taken in conjunction with other features, and should not be used as a direct index of severity as though it possessed mathematical accuracy. The plan of deciding upon the treatment, whether operative or non-operative, by the reading of the basal metabolic rate alone is one which is less often adhered to than formerly, for it is recognized that slight variations in the records alter the final estimation exceedingly, that errors in technique are easily committed, that slight psychical disturbances profoundly modify the result, and considerable fluctuation may occur within a comparatively short period. If, however, we can disabuse our minds from regarding the rate of basal metabolism as an unfailing signal owning mathematical exactness, it remains an index of great value. A serious drawback to its use is the difficulty of estimation, considerable practice being needed to obtain accurate and comparable readings; indeed, the necessary apparatus has found its way into the armoury of few practitioners in this country. Some simple formula would be valuable if it approached the basal metabolic rate estimation in the degree of its accuracy.

Read's Formula.

A formula introduced by Read is not difficult to work with. It is as follows:

$$\tfrac{3}{4}(\text{P.R.} + \tfrac{3}{4}\,\text{P.P.}) - 72$$

where P.R. is the pulse rate, and P.P. the pulse pressure. Taking a normal patient with, say, a pulse rate of 72 and the pulse pressure of 40 the sum is thus:

$$\tfrac{3}{4}(72 + 30) - 72, \text{ which is equal to } +3.$$

To test the degree to which Read's formula approximates to the basal metabolic rate Dr. T. C. Hunt, recently of the St. Mary's Hospital Medical Unit, has compared the two in a limited number of cases: 54 were examined in all, but of these 4 were rejected, the basal metabolic rate being regarded as unreliable in view of excitement, nervousness, or other cause. Of the remaining 50, in 27, or 54 per cent., the two agreed within 10; in other words, they gave results which for practical purposes may be considered as equal. In only 3, or 6 per cent., did Read's formula give a result higher than the basal metabolic rate by over 10. (This agreed with the opinion of Eason, who states that Read's formula agrees with the basal metabolic rate in 50 per cent. of cases.) In 6, or 12 per cent., Read's figure was between 10 and 20 less than the basal metabolic rate; in 8, or 16 per cent., between 20 and 30 less; and in 6, or 12 per cent., it was more than 30 less. These last 6 were all cases with high basal metabolic rates, the average value being + 73.

Dr. Hunt draws the following conclusions:

1. Read's formula will very seldom give appreciably too high an estimate of the basal metabolic rate, but often gives slightly lower figures.

2. A very marked discrepancy suggests an error in technique.

3. The basal metabolic rate in very bad cases is probably fairly considerably higher than Read's formula suggests.

4. Iodine treatment appears to improve the circulatory system as shown by Read's formula more definitely and more permanently than it improves the basal metabolic rate, which does not appear to be reduced for long by the comparatively small doses given (up to 20 minims of Lugol's solution daily). With this exception Read's formula has shown improvement with treatment exactly parallel with that shown by the basal metabolic rate.

5. Read's formula should be applied under basal conditions, but does not seem to vary so much as the basal metabolic rate from food or other external factors. In some cases it is quite impossible to gauge the latter accurately.

Within limits it would seem that the figure obtained by this formula is an accurate guide to progress, and differs widely from the basal metabolic rate figure only in the severest cases. It has a particular field of usefulness when for some reason estimation of the basal metabolic rate is not practicable.

TREATMENT.

The psychical and toxic factors in the causation of Graves's disease suggest at once two lines of treatment. The value of rest and freedom from mental excitement is too well known to need emphasis here. Removal of a focus of sepsis is also clearly indicated if the importance of such in the etiology be conceded. Unfortunately these two lines of treatment are in part antagonistic, for such an operation as tonsillectomy, for example, in an adult who has had repeated quinsies is no light one, and cannot be undertaken in a case of severe Graves's disease without anxiety. It finds its chief place in early cases, or those in which the thyro-toxicosis is slight. The question of focal sepsis should be borne in mind whenever an early case is encountered, or at a stage when the full clinical picture is still lacking. Its detection and consideration at this stage may be of great value as a preventive measure.

The modern treatment by administration of iodine, especially in the form of the French tincture or of Lugol's solution, has largely replaced earlier drug treatment. There can be no doubt of its potency, for within a very short time definite improvement is obvious in many cases, whilst the thyroid gland can be felt to become firmer. Unfortunately there is less certainty about the permanence of the good effect. Most English, German, and American observers hold that prolonged treatment is unsuccessful. Many French authorities, however, are of the contrary opinion. Thus Dautrebande,[11] Labbé,[12] and Boudreau[13] state that iodine must be administered over many months, with gradually increasing dosage up to 0.5 or 0.6 gram of metallic iodine, given five or six times daily. These are truly heroic doses compared with the 2 to 10 minims of Lugol's solution, three times daily, customarily employed in this country. The rationale of iodine treatment is ambiguous, and, indeed, iodine would appear definitely to be contra-indicated if it were true that Graves's disease is hyperthyroidism, and that its toxicosis is caused by excess of thyroxin. The recognition, however, that the thyro-toxicosis is related to excess of other secretion, and not to that of the iodo-colloid substance, suggests another explanation. May it not be that administration of iodine relieves or assists the thyroid in its reaction to toxins, and thus indirectly, by lessening its functional activity, reduces the output of the secretion which causes the thyro-toxicosis? In view of the unsatisfactory experience of others I have treated only a few patients by persistent and prolonged iodine therapy. The chief results have been gain in weight and lessened excitability and tremor, but there has been little beneficial effect upon the basal metabolic rate or the cardio-vascular symptoms. It must be confessed, however, that I have not yet had the temerity to use the large doses so forcibly recommended by some French writers.

About symptomatic treatment I shall not particularize as I have little new to advance. There are many occasions for such measures during the course of the disease. A mixture containing digitalis and bromide is, of course, one which has been very generally employed to combat the tachycardia and fibrillation, and to procure sleep and reduce the mental excitement. My belief is that digitalis should be used only with great caution in Graves's disease, for in this condition it may do serious harm.

There remain to be considered the two destructive procedures, which are used to cripple the over-activity of the thyroid gland—namely, *x*-ray therapy and operative procedures. There is no doubt that both may produce great amelioration of the symptoms, and may hasten recovery, though I think that in neither is one justified in using the word "cure." In a disease in which, under medical treatment, the tendency of the majority is slow progress in the direction of recovery, it is difficult to compute the precise value of surgical treatment unless its effects are immediately or rapidly curative. Nor is it easy to find any agreed statement as to which cases are considered by surgeons particularly suitable for surgical treatment. There are many who regard all cases as suitable, except during an acute phase; there are others who are disinclined to operate at all. It must be acknowledged, however, that the tendency in recent years has been more and more towards operation, and the operative mortality has fallen in expert hands to a very low figure. On the other hand, *x*-ray treatment has become somewhat less favoured since it has been recognized that its effects cannot be controlled with precision, and that it interferes seriously with subsequent operative procedures. The common practice of preceding operation by a course of treatment by physical and mental rest, and by the administration of iodine, has certainly lessened the danger of surgical intervention. At my hospital we have no enthusiasts for surgical treatment, and it is seldom employed on my patients. In mild cases it seems to me to be unnecessary, and in very severe cases too dangerous, while of the intervening cases improvement by medical treatment is what one is accustomed to expect. In patients near the menopause, also, relief before long is to be anticipated. Perhaps I am influenced by the belief that surgical treatment for this disease is only treatment of a secondary condition, and that our chief hope lies in being able to discover and treat the primary causes. In the meantime, surgical treatment, though it may represent only a temporary phase, has undoubtedly a sphere of usefulness. To employ it as a routine measure is, I believe, irrational, but when medical treatment fails or falters it shortens the period of invalidism, which is so serious a consideration in many patients that it more than counterbalances the added risk.

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THE IMPORTANCE OF POST-NATAL MATERNAL CARE.

COMPRISING A REVIEW OF THE ORGANIZATION AND WORK OF THE POST-NATAL CLINIC OF THE EDINBURGH ROYAL MATERNITY HOSPITAL.*

BY

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IT is the common experience of those whose work is concerned with the treatment of diseases peculiar to women that parturition is ultimately responsible for a considerable proportion of the disability with which they have to deal. The importance of childbirth in this regard is reflected in the large number of gynaecological patients who refer their complaint to a previous pregnancy or labour. It is an obvious corollary that the degree of skill and care with which the process of childbirth is conducted is an important factor in a woman's subsequent well-being. The prophylaxis of future invalidism, however, requires from the accoucheur not only that pregnancy and labour be so managed as to reduce to a minimum the incidence of trauma and infection, but also such careful supervision of the patient's convalescence as will best assist the processes of involution and repair and restore a maximum degree of bodily efficiency.

Whereas the claims of the expectant mother have of recent years attracted, and rightly so, a full measure of consideration, the need for a similar attitude of guidance and

* An address delivered to the Ayrshire Branch of the British Medical Association, February 27th, 1929.

watchful care during the weeks which follow delivery has scarcely received from obstetric teachers and writers the emphasis it deserves. It is with the object of directing attention to this important aspect of our obstetric responsibilities that I have chosen post-natal care as the subject of this address.

After the crisis of labour, with its major issues of life and death, has been successfully passed, the weeks which follow are apt to constitute a period of anti-climax in which watchfulness naturally tends to relax, to the extent occasionally that the patient is finally dismissed with or without a single examination after the conventional fortnight has elapsed. It is to be remembered that a minimum period of six weeks must always pass before the return of the pelvic organs to their normal condition is accomplished and recovery can be considered complete. Moreover, examination in a large series of women six to eight weeks after confinement has shown that even after a normal delivery, and in spite of negative examination findings at the conclusion of the lying-in period, various pathological processes may develop later, as the result of which recovery is short of perfect. It would appear desirable, accordingly, to extend the supervision of our puerperal patients so as to cover the period during which the development of such late complications remains a possibility.

The management of the more immediate convalescence after confinement has become so standardized that it is only necessary in passing to re-emphasize certain important principles. These comprise essentially the maintenance of asepsis, the establishment of lactation, and insistence on an adequate period of rest in bed, with simple bed exercises and frequent change of posture so as to relieve engorgement of pelvic veins and ensure adequate drainage. For those who can afford it massage is beneficial, both in virtue of its general stimulating effect, and also in making good the loss of muscular tone produced by the forced inactivity of the latter weeks of pregnancy and the lying-in period.

As a routine a vaginal examination should be made about a fortnight after delivery. At this time the condition of the perineum, cervix, uterus, and appendages is investigated. Injuries are inspected and the state of healing noted. If the uterus is found to be retroverted it is a simple matter to replace it at this time; in such a case the patient is instructed to report in a week for re-examination. If the displacement has recurred it is again corrected and a pessary introduced, otherwise a period of three weeks is allowed to elapse before a further examination is made.

When the patient is discharged she is given general advice in regard to the immediate future of her infant and herself; in addition, she is instructed in simple graded exercises devised to restore tone to the overstretched muscles of the abdomen and pelvic floor. Abdominal exercises of the Muller type, combined with the use of a properly fitting corset, have been found to be of much value in preventing or arresting the development of visceroptosis to which the feeble over-stretched condition of the abdominal musculature predisposes during the weeks which follow delivery. Exercises to strengthen the muscles of the perineum and pelvic floor are similarly useful in cases in which the musculo-fascial tissues round the vaginal entrance have been over-stretched at the time of delivery.

Even when the patient's condition a fortnight after delivery is satisfactory it is a wise precaution to encourage her to submit to re-examination at a later date. Two years ago, in the Edinburgh Royal Maternity Hospital, a weekly post-natal clinic was organized for the purpose of supervising the patient's progress after she left hospital, guiding and advising during the difficult weeks of convalescence, treating in their earliest stages such sequelae of parturition as might manifest themselves after the conclusion of the lying-in period, and, in short, ensuring that the mother's return to health should be as uninterrupted and as complete as possible. Every patient is instructed to report to the post-natal clinic on at least two occasions subsequent to her discharge. The first revisit is made, as a rule, about five weeks, and the second about ten or twelve weeks, after delivery. In certain cases, however, more frequent or more prolonged attendance at the post-natal clinic may be advised.

During the past two years rather more than 2,000 patients have reported for re-examination. This represents about 60 per cent. of the total number of in-patients treated by the hospital during the same period of time. Various factors have combined to prevent the "follow-up" being more complete. About 15 per cent. of the patients lived too far from hospital to permit of subsequent attendance; nearly 10 per cent. were unmarried and disappeared at once after leaving hospital; the remaining 15 per cent. could not be persuaded that the probable benefit of further examination and advice would amply repay the little inconvenience occasioned.

An analysis of these cases shows that in approximately 1,400, or 70 per cent. of the total number, the patient's general health was satisfactory, and on examination it was found that parturition had not in any way impaired the efficiency of the pelvic organs. To this number should probably be added the majority of those patients who failed to report. In the remaining 30 per cent. abnormalities of different types and degrees of importance were present. It is a measure of the importance of post-natal work that in almost one case in three special advice or treatment was called for.

RETROVERSION.

Probably the commonest, as it was one of the most important, of the abnormal conditions encountered was backward displacement of the uterus. This lesion was met with in 18 per cent. of the patients who reported to the post-natal clinic. It is noteworthy in this connexion that at the time of discharge from hospital the uterus was found to be retroverted in not more than 8 per cent. of cases, a finding which would indicate that this displacement is most likely to occur during the third or fourth weeks after delivery rather than during the lying-in period. There was in addition a small number of cases in which at the first revisit to hospital the uterus was found to be in a normal position, but in which at a subsequent examination backward displacement was found to have occurred.

An investigation into the factors which might predispose to puerperal retroversion showed that subinvolution was present in a large proportion of the cases examined, and was probably the most important individual cause of the condition. While this is so, it is probably also true that retroversion of itself exerts an adverse influence on involution, for in most cases correction of the displacement was quickly followed by diminution in the size of the uterus and disappearance of persistent red vaginal discharge. Neither multiparity nor difficult labour appeared of itself to be of etiological importance unless at the same time there was impairment and relaxation of the lower uterine supports, with consequent descent of the uterus; the association of retroversion and partial prolapse of the uterus was not uncommon. Early rising and hard work too soon after confinement probably operate in the same way, and explain the greater frequency of retroversion in the hospital class of patient. An important and unexpected observation in this connexion was that in cases delivered by Caesarean section the incidence of retroversion, in spite of a longer period of recumbency, was relatively much lower than in those delivered per vaginam. It was found, finally, that where retroversion had been known to exist before or during pregnancy there was a pronounced tendency for the displacement to recur after delivery.

The symptoms which puerperal retroversion may produce are difficult to define. Low sacral backache, general pelvic discomfort, and prolonged lochia rubra were present in most cases. But the condition is so often associated with other pelvic abnormalities, the result of injury or infection, that it is not easy to differentiate the symptoms produced by the retro-displacement itself from those to which other accompanying conditions may give rise. The persistence of red vaginal discharge, however, was noted so frequently in this group of cases as to be almost pathognomonic of retroversion in the late puerperium. It is probably true that such bleeding is often in large part due to an associated subinvolution, but the frequency with which it subsides so soon as the position of the uterus is

corrected and without other treatment would suggest that a mechanical factor incidental to retroversion is also involved.

Reference has already been made to the treatment of puerperal retroversion when it is discovered at the conclusion of the lying-in period. Similarly, when the displacement is first noted six weeks after delivery an attempt is made to correct it and retain the uterus in normal position by means of a Hodge pessary. As a rule the uterus can be brought forward without difficulty, although in a few cases a general anaesthetic is needed. After an interval of six weeks the pessary is withdrawn and the patient asked to attend for re-examination in a further three weeks' time. If the uterus is found to have remained in good position the patient is discharged, but advised to report should pelvic symptoms of any kind appear. If, however, the displacement has recurred pessary treatment is continued for six months.

In the majority of the cases observed the end-results of pessary treatment were in a high degree satisfactory. In a small number deficiency of the pelvic floor, tenderness in the vaginal vault, or fixation of the uterus made pessary treatment unsuitable, and in a few cases the uterus tended to retrovert as soon as the pessary was withdrawn. But in rather more than 80 per cent. of the cases which were followed up symptoms were relieved and the uterus remained in good position after the support had been removed. The earlier the displacement was discovered the easier did its correction prove to be and the less its liability to recur. On the other hand, the symptoms to which retroversion in its early stages gives rise are often so slight and indefinite that unless a routine examination is made six or eight weeks after confinement the condition must frequently remain undiagnosed until such time as its cure by non-operative methods becomes unlikely.

LACERATION OF THE CERVIX.

Laceration of the cervix, associated as a rule with eversion of the edges of the tear and localized surface infection, was found in a relatively large number of cases.* In primiparous patients, apart from the superficial fissuring which is the inevitable legacy of every first labour, injury to the cervix was found in approximately 15 per cent. of the cases examined.

As a cause of trauma of this nature difficult instrumental delivery predominates, and the most serious variety of cervical injury was found in the "failed forceps" type of case, in which failure to deliver had been due to incomplete cervical dilatation. Short of this, the lesion was found in almost every case in which complete dilatation and effacement of the cervix had not occurred spontaneously: it was present, for example, in cases in which, because of maternal or foetal distress, forceps had been applied while as yet a thin rim of cervix could still be felt. Similarly, where an attempt had been made to complete the dilatation of the cervix manually or by drawing the head down into it by forceps, laceration was the common result. On the other hand it is noteworthy that in cases in which delivery had been spontaneous, cervical injury was found in 8 per cent. of cases. In a small number of these labour had been precipitate; in a considerable proportion, however, the membranes had ruptured prematurely, and it is probable that the consequent long dry first stage of labour with dilatation of the cervix by the hard head in place of the soft bag of waters was responsible. In other cases it is possible that a constitutional friability of the cervical tissues may have predisposed to injury. The lesion was not appreciably more common in elderly patients nor did undue size of the child appear of itself to be a factor of importance.

With the immediate dangers of cervical laceration—haemorrhage and acute inflammatory invasion of the pelvic cellular tissue—this paper is not concerned. On the other hand, the eversion and subsequent infection of exposed cervical mucosa, which is so apt to interfere with healing, especially in the transverse or deep stellate type of laceration, constitutes an important puerperal lesion. It is possible at this stage to observe the early development of a condition which later may cause more or less serious ill health. Furthermore, the association of subinvolution and recent cervicitis was so frequently noted as to suggest that the process of involution may be adversely influenced by a focal infection of this type.

The immediate repair of laceration of the cervix at the time of delivery has obvious advantages. On the other hand, the increased risk of sepsis involved unless a perfect aseptic technique is assured makes the procedure inadvisable in ordinary domestic conditions. While this is so, much can be done in the later puerperium to prevent or diminish subsequent disability by controlling the tendency to eversion and by the eradication of infection before the deeper tissues of the cervix become involved.

In the series of cases under review douching, tamponage, and local applications of different types have been employed. The actual cautery, the use of which does not necessitate a general anaesthetic, has proved an effective therapeutic agent not only in suppressing infection but also in reducing eversion by reason of the cicatrization which it produces. Short of this the application once weekly of a 10 per cent. solution of silver nitrate has produced satisfactory results. In a few cases of extensive injury a plastic repair with excision of infected tissue was recommended.

SUBINVOLUTION.

Subinvolution was found with considerable frequency in the series of cases under review. In approximately 12 per cent. of those who reported to the post-natal clinic there was persistence of lochia rubra as late as the sixth or eighth week after delivery, and on examination evidence of defective involution was found. In a considerable proportion labour had been difficult and instrumental, and the adverse influence which puerperal infection, not necessarily of a major type, commonly exerts on involution of the uterus was evidenced by the frequency with which the earlier convalescence of many cases in this group had been complicated in this way. Attention has also been directed to the etiological relationship to subinvolution which retroversion and cervical infection appear to possess. The persistence of lochia rubra until the third or fourth week after confinement appeared occasionally to result from such interference with the pelvic circulation as severe constipation may produce, suitable purgation being quickly followed by cessation of haemorrhagic discharge. Only in a small number of cases could the condition be attributed to retention of fragments of placenta or membranes.

The importance of normal lactation in promoting involution was demonstrated in a convincing manner by the findings in a comparative series of two hundred cases, one hundred of whom nursed their children and one hundred did not. The duration of the red lochial discharge in the former ceased on the average on the ninth day post partum, whereas in the latter it continued until the eighteenth day after delivery.

The treatment of subinvolution was directed in the first place to the correction of such accompanying conditions as retroversion, cervicitis, constipation, or retained products of conception. Where the condition was associated with a residual pelvic infection a course of douching and vaginal tamponage was commonly employed. The administration of quinine and of ergot in some form proved a useful adjuvant in stimulating involution and in controlling persistent vaginal bleeding, although in a few cases this was so obstinate as to require curettage.

BACKACHE.

Backache proved to be a much less common disability during the weeks which follow confinement than one had anticipated. Although every patient was directly questioned in regard to it, not more than 8 per cent. of those who attended the post-natal clinic complained of discomfort of this type. Where uterine displacement, cervicitis, or other pelvic abnormality appeared to be responsible the pain was almost invariably referred to the sacral region. It was, however, only in a relatively small number

* Multiparous patients have been omitted from this analysis as the possibility of the cervix having been injured in a previous labour could not be excluded.

of cases that backache could be related to a visceral lesion. For the most part puerperal backache is of the lumbar or lumbo-sacral or sacro-iliac variety, and would appear more often to be an orthopaedic disability than an indication of gynaecological disturbance. In the majority of cases discomfort had been present for several weeks before delivery, and its origin is probably to be found in the exaggerated lordosis incident to the latter period of gestation; after the patient begins to go about the complaint may be further aggravated by faulty posture and by weakness and general relaxation of the abdominal parietes. There is considerable risk of this condition developing into a troublesome chronic disability, and from the outset treatment should be directed towards the correction of faulty posture, instruction in appropriate exercises, and the employment of a suitable brace or corset.

Apart from such relatively commonplace obstetric sequelae as those which have been considered there is an important group of cases which necessarily demands a prolonged period of supervision and treatment after delivery; such, in particular, as those in which pregnancy has been complicated by hydatidiform mole, heart disease, venereal disease, or albuminuric toxaemia. In post-eclamptic and albuminuric patients, for example, persistence of high blood pressure and albuminuria were found in more than 30 per cent. of cases, and necessitated special advice in regard to diet and in other directions.

Finally, there have been many cases in which debility, anaemia, constipation, dysuria, difficulties in regard to lactation, and other similar conditions, have called for simple advice and treatment.

There are essentially two considerations on which a plea may be based for a closer and more prolonged follow-up study of our obstetrical cases than is usually thought necessary. In the first place, the instructional value of routine examination some six or eight weeks after delivery is difficult to exaggerate. In retrospect such an investigation throws light and guidance on the conduct of labour, and, indeed, on the whole process of childbirth. It discloses the manner in which the general bodily functions have withstood or been impaired by pregnancy and parturition, and illustrates the effect on the reproductive organs which different types of labour, normal or abnormal, may exert.

Of more immediate practical value, however, than the "audit" of our work which the post-natal clinic provides is the scope which it offers in an important field of preventive medicine. It directs attention to certain conditions in their early stages which otherwise may remain untreated until such permanent structural changes have occurred that cure by non-operative measures becomes unlikely. In its relationship to the patient's future well-being it is complementary to, and rivals in importance, the more routine supervision and examination before delivery. No department of practical medicine would appear to provide a better opportunity of recognizing the early signs of disease or of treating them with such gratifying results.

The extent to which such a scheme of obstetrical after-care as I have outlined can be applied in general practice conditions is not easy to define. There are certain obvious difficulties, such as that of adding to duties for which remuneration is already seriously insufficient, and more, perhaps, the natural diffidence of patients to submit to what they may consider unnecessary examination. Furthermore, the incidence of post-partum morbidity is naturally lower in domestic than in institutional practice, which is so largely concerned with abnormal midwifery, and it may be claimed that the need for prolonged supervision after delivery is correspondingly less urgent in the former than in the latter. It is unfortunately true, however, that such conditions as retroversion, cervicitis, and backache may develop despite the most conscientious supervision during pregnancy and the most careful conduct of labour, and, in view of the impaired health to which such sequelae of childbirth may later give rise, a policy of after-care, even if it is restricted to the investigation and treatment of persistent vaginal bleeding, leucorrhoea, and backache, must necessarily help us to discharge more effectively and more completely the responsibilities we are privileged to assume.

VARIATIONS IN THE INCIDENCE OF PNEUMOCOCCAL INFECTION IN THE NASAL ACCESSORY SINUSES OF CHILDREN.

BY

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PNEUMOCOCCAL infections in children began to attract my attention last summer, when I remarked that an unusually large number of the nasal accessory sinuses I examined were reported thus infected. I have turned up all such cases in my private file since the end of 1919, and found record of 1,002 patients, of whom 242 were under 15 years of age. In 52 adults a subsequent re-examination was made, so that for the present purpose there are 1,054 "cases," comprising 3,011 sinus explorations.

The technique employed throughout was that evolved twenty years ago by my father, Dr. P. Watson-Williams. Briefly, a cannula is introduced into the sinus, a small volume of sterile water is syringed in, withdrawn, and examined microscopically and bacteriologically. The sinuses generally examined were the maxillary antra and the sphenoidal; less commonly the posterior ethmoidal cells. The antrum is approached not from below through the inferior meatus, but from above through the middle, a method of great value in dealing with small children. It is comparatively rarely necessary to examine the posterior sinuses of children, especially young children. Six of the patients were under 3 years of age; the age distribution of the whole series was as follows:

TABLE I.

Age.	Patients.	Antra.	Sphenoids.	Ethmoids.	Sinuses.
Years. 0–4 ...	21	41	—	—	41
5–9 ...	67	129	4	1	134
10–14 ...	154	285	41	5	332
Children ...	242	456	45	6	507
Adults ...	812	1,557	815	132	2,504
	1,054	2,013	860	138	3,011

Arranging this material in years, and expressing the incidence of pneumococcal infection as a percentage (whether of children or of sinuses examined), it was at once clear that my impression had been correct—that is, that during 1928 a very considerable rise had occurred in the rate. Further, a period of similar high incidence had passed unnoticed in 1923-24, with a much lower rate of infection before and after it. Ignoring 1922, the recorded observations for which year are too few for inference, and grouping together other years in which the incidence was closely similar, the rise and fall is seen to be from 0 to over 10 per cent., as shown in Table II.

There has been no conscious difference in technique, nor in the selection of cases for examination, to explain these variations. In order to test whether accident affected the rather small numbers involved, a similar analysis was made of the figures for "all cases," the results of which are given above. Allowing for the difference in the average number of examinations per child patient (2.1) and per adult (3.3), children form for each year so small a part of the whole that the figures for "all cases" are practically those for adults. It is seen that the incidence of pneumococcal infection for all cases shows a variation—less, it is true, in its absolute but as great in its relative extent, and occurring in approximately the same periods as for children. We may deduce that some definite factor operates to cause this variation, though whether this is climatic, epidemiological, or otherwise I am not competent to suggest. The incidence, however, of this infection is not solely of rhinological interest. *A priori* it might be supposed that an individual who harboured living pneumococci

in his sinuses ran a definite risk of developing a more serious form of the infection. In actual fact, 7 of the 88 patients (2 children, 5 adults) have had proved pneumococcal or lobar pneumonia, and there are possibly more, as the significance of the association has hitherto not been

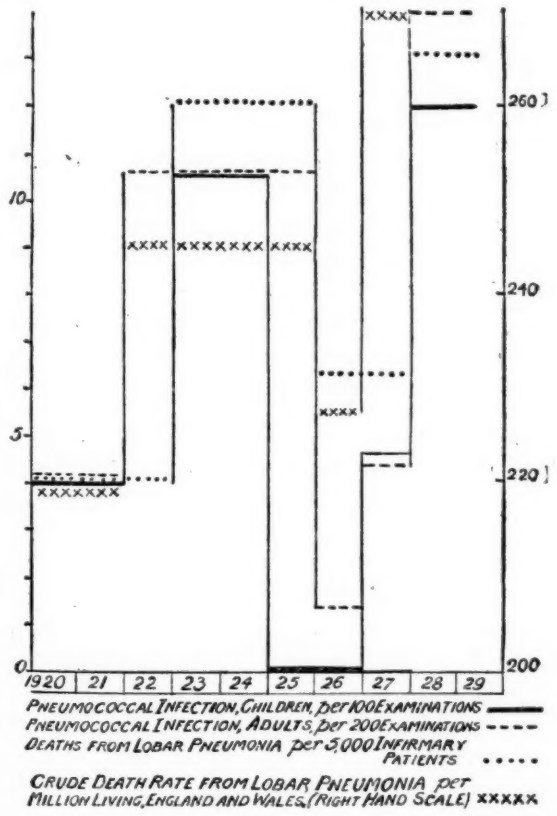
TABLE II.

Year.	Children. Examinations.	Children. Pneumococcal Infection. Per 100 Children.	Children. Pneumococcal Infection. Per 100 Examinations.	All Cases. Examinations.	All Cases. Pneumococcal Infections per 100 Examinations.	Lobar Pneumonia at Necropsy per 10,000 Infirmary Patients.	Crude Death rate from Lobar Pneumonia per Million Living England and Wales.
1920 ...	51	...	...	245	...	...	220
1921 ...	75	5.7	4.0	326	2.1	8.2	
1922 ...	6	...	...	165	...	...	
1923 ...	28	...	...	235	...	...	246
1924 ...	47	15.0	10.6	343	5.3	24.1	
1925 ...	32	...	...	385	...	...	
1926 ...	37	0	0	298	0.7	...	228
1927 ...	65	...	...	368	2.2	12.5	270
1928-29*	165	16.3	12.0	611	7.0	26.4	

* Fourteen months.

appreciated nor have special inquiries been directed to the point; two cases of pneumococcal meningitis and one of pneumococcal mastoid disease also are recorded.

By the kindness of Dr. A. D. Fraser I have been able to obtain the figures for lobar pneumonia from the *post-mortem* indexes of the Bristol Royal Infirmary. Treating



these as an index of the local incidence of the disease, and the Registrar-General's returns as a national index, we see that there has recently been a close association between the incidence of pneumococcal infection of the sinuses and that of pneumonia. All four sets of figures show a low value for 1920–21, a high value for 1923–24, a low value for 1926, and a subsequent rise. We appear now to be in a period of high incidence of pneumococcal infection; certainly the local figures for lobar pneumonia are high, and I feel tempted to predict that 1928 and 1929 will eventually show high national incidence. At least with local figures, the rise and fall of sinus pneumococcal infection tends to precede that of pneumonia; and it will be interesting to observe in the future whether variation in the nasal sinus infections (and particularly in children, in whom it seems to be greater and to appear rather earlier than in adults) forms a reliable guide to forecast the trend of mortality from lobar pneumonia. The accompanying graph illustrates the association recorded in the last ten years.

CONFUSIONAL INSANITY WITH EMPYEMA OF THE SPHENOIDAL SINUS.

BY

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(*With Special Plate.*)

THE association of a sphenoidal sinusitis with definite macroscopic change and microbic invasion of the pituitary gland in a case of insanity is described below, and is illustrated by sketches and photomicrographs; its importance to psychiatry is emphasized by a consideration of pituitary-hypothalamic metabolic disorders in 69 cases of insanity in which a sphenoidal sinusitis had been demonstrated clinically.

A man, aged 51, died four months after admission to hospital. His early history was indefinite, but there was concussion at the age of 26. The first onset of mental disorder occurred when he was 31; from this he recovered, but relapsed again ten years later. He was suffering from confusional insanity, was talkative, disorientated, and maniacal. He had auditory hallucinations, bilateral otitis media, bilateral ptosis, and his blood pressure was 210. The Wassermann and Widal reactions were negative. Three days before death he developed epileptiform fits, after sixty-eight of which he died in status epilepticus.

Post-mortem Examination (seventy-five minutes after death; the tissues as removed were immediately placed in fresh Kaiserling solution).—There were slight superficial haemorrhages in the pia arachnoid, the largest being over the left fronto-parietal area. The cerebro-spinal fluid was slightly blood-stained in the posterior cisterns only. The dural surface of the base of the skull was clear and shiny. There was pus in the pharynx, which could be traced to the left sphenoidal ostium. The sphenoidal sinus was literally full of yellowish pus, the cavity being a large one and almost surrounding the pituitary gland. The pituitary contained large masses of colloid. There was a mucous polypus in the left antrum. The right lung was adherent to the chest wall; there was some perihepatitis, perisplenitis, and a well-marked hydronephrosis.

EXPLANATION OF THE FIGURES.

Fig. 1 is a sketch of the sinus (actual size), and illustrates the following:

(*a*) Empyema of the sinus. Thick, glairy, yellow pus was attached firmly to the posterior inferior wall, from which it extended to and through the ostium. The sketch gives a poor idea of the actual amount originally present, fixation having caused a very marked shrinkage, and handling of the specimen the detachment of a quantity of smaller particles.

(*b*) The pituitary fossa with its contained gland projects into, and is almost surrounded by, the cavity of the sinus. The importance of this anatomical relationship is obvious by inspection of Figs. 1 and 2. It has already been emphasized[1] that actual bone does not offer so much resistance to the spread of organisms as might be supposed, this function being the property of, first, the sinus membrane, and, secondly, the dural pericsteum on the other side of the bone. Hence we really have a condition in which the most important endocrine gland of the human body is suspended in a bath of pus.

(*c*) Macroscopic abnormality of the pituitary gland is evidenced by the abnormal appearance, which is irregular, and does not show the normal colour difference between the anterior and

posterior lobes, the anterior usually having a uniform reddish colour and being of loose texture, whilst the posterior part is firmer and considerably paler but uniform. The dividing line between the two lobes should be very narrow and distinct. In the present instance the pars intermedia is swollen, and contains masses of colloid. (In another case this colloid material has been shown to be associated with the presence of micro-organisms[2]; and in yet another case of our series, as yet unpublished, an enormous mass of colloid, almost as big as the pituitary gland itself, was found. The case was one of severe epilepsy, and the patient, who had recovered, was without fits for nearly a year before death.) The irregularity of the capsule and occurrence of adventitious fibrous tissue should also be noted.

Fig. 2 is a diagrammatic sketch superimposed upon the sinus to show the close relationship of the infected sinus and pituitary to that part of the brain concerned with various metabolic processes[3] (and which is often acutely involved in lethargic encephalitis). As the path of secretion is toward the brain stem it is obvious that toxic bacterial products in pituitary infections also find their way into this most important region of the brain, actual organisms having been demonstrated in the pituitary stalk of our case M. L.[1]

Fig. 3 is a photograph of the sinus membrane (Gram's stain). In the upper part of the figure can be seen ciliated epithelium, whilst the long, well-formed chains of a diplococcal streptococcus are below the surface. Although there was considerable pus in the sinus there seemed to be very little leucocytic reaction in the membrane, a point which must be emphasized, as it has an important bearing on the finding of the organisms still deeper in the tissues—either the organism seen was "non-pyogenic" or the biological immunity reaction by leucocytic infiltration was suspended. No other organisms were found in the sinus membrane. It has been said by an eminent histologist that granules in the tissues should never be taken for micro-organisms unless surrounded by cellular reaction. In the present instance undoubted streptococci are seen without even a lymphocytic reaction of any magnitude; *post-mortem* invasion can certainly be definitely excluded. This figure and all the remaining figures are direct reproductions from untouched photomicrographs.

Figs. 4 and 5 show the streptococcal chains in the submucosa and adjacent to the bone surface (black). Note especially that the morphological appearance of these still undoubted streptococci is now becoming less typical. The chain formation is distinct, but the size, shape, and spacing of the stainable part of the organism are distinctly irregular as contrasted with the diplococcal streptococcus nearer the surface.

Fig. 6 is a minute canal in the bone in which streptococcal chains are viewed "end on," the chain characteristic being verified by the microscopical examination of successive horizontal fields.

Fig. 7 shows streptococci in the vessel wall of the anterior pituitary, the arrows indicating a vertical and a horizontal chain respectively.

Fig. 8 shows the organisms adjacent to the eosinophile cells of the pituitary, the latter recognizable as large dark masses.

Fig. 9 shows small granules, in rows in the wall of the cavernous sinus, which are at least suggestive of their being partly digested streptococcal chains.

Fig. 10 is a vessel from the hypothalamus (stained by Gram's stain) showing granules in its wall, the significance of which, however, is as yet doubtful. The large dark mass consists of mucinoid material, which probably indicates a degenerative lesion of the nervous tissue in that region.

Fig. 11 is another vessel of the mid-brain showing a large collection of granules of varying sizes in its accompanying lymphatic space.

Fig. 12 shows a mass of spirochaetes, not syphilitic, but of the oral type, in the centre of a small lymphatic nodule adjacent to the upper part of the internal carotid, which was removed through the skull with the sphenoid block. Its interest lies in the fact that it clearly demonstrates the distance that a septic extension may proceed when the organisms are relatively avirulent and of the type usually regarded as non-pathogenic. Its proximity to the internal carotid may, given the assumption of a toxic or septic spread along the artery, explain the mental symptoms of confusion, since such spread would affect chiefly the cortical layer of the brain.

COMMENT.

The clinical picture suggested by the case is therefore that of a man having had an accident to the skull followed by infection, the nature of which remained obscure for years. Mental disorder was sufficiently marked to necessitate certification five, ten, and twenty-five years afterwards. The later finding of empyema of the sphenoidal sinus and otitis media strongly suggests that there had been an insidious chronic infective process of long duration involving both. We know from anatomical considerations that the carotid artery is in intimate relation both with the middle ear and the sphenoidal sinus.[4] From this it is obvious that the lymphatics accompanying the carotid would at least occasionally contain deleterious toxic products, and perhaps even on occasion organisms; such a condition, by an assumption of further distal spread by the wave-like arterial pulsation along the course of the carotid, would account for the cortical haemorrhages, especially that over the left fronto-parietal area, and also explain the mental confusion. The pituitary involvement renders impairment of the pituitary-hypothalamic region of the brain a logical conclusion. In view of the hydronephrosis one must consider uraemia in connexion with the status epilepticus, but it is noteworthy that in our collection of specimens with gross involvement of the sphenoidal sinus and pituitary most of them were epileptics, suggesting a more intimate relation between the status epilepticus and mid-brain disorder—in this case through the medium of an infected sphenoidal sinus.

A consideration of this case naturally suggests that pituitary disturbances should regularly occur when the infective process affects the tissues deeper than the membrane on the roof of the sphenoidal sinus. Well-marked cases showing such disturbance are often met with in general practice, and Ferreri[5] quotes a case with typical pituitary symptoms and early acromegalic signs which improved following drainage of the sphenoidal sinus. In such cases the pathological effects of the sinusitis presumably do not influence nervous tissue beyond the pituitary. It is not at all improbable, however, that in some cases there is a further extension to the brain stem via the pituitary stalk. The pituitary may not be affected in quite the same way as in the above cases, but a toxic disturbance of the pituitary secretion occurs leading to symptoms of hypofunction (with consequent overaction of other endocrine glands) rather than the more commonly recognized hypersecretion following irritation by tumour. In mental hospital cases there probably occur phases of hypersecretion and hyposecretion due to variations in the infection and resistance, leading to a disturbed balance of endocrine gland functions, which is a well-recognized feature of mental disease.

Gigantism, acromegaly, and dystrophia adiposo-genitalis are often recognized as occurring in mental hospitals;[6] but of much more importance in the present consideration are the *minor* changes which may occur due to dysfunction of the pituitary gland and the sympathetic centre of the brain with which it acts in various metabolic functions. The demonstration of such minor pituitary disturbances in mental hospital patients is difficult for several reasons. The co-operation of the patient is often wanting; the history, even from the patient's relatives, is deficient; the mental attitude itself of the patient demands such attention and study that minor endocrine signs and symptoms, though noticed, do not usually find their proper place in the clinical picture of the case; and also characters which we usually associate with pituitary disturbances are limited to those due to an irritation by a tumour of the pituitary rather than a toxic disturbance of its secretion.

Table I, collected from Schafer, gives various functions of the pituitary; Table II, from various sources, gives the nerve centres of the hypothalamus. These should be *studied* in conjunction with Tables III and IV, in which the symptoms of pituitary-hypothalamic dysfunction have been tabulated in 69 cases of insanity in which a pyogenic infection was clinically demonstrated in the sphenoidal sinus by Mr. W. Stirk Adams. The clinical symptoms were collected with the aid of Dr. T. C. Graves, Dr. Elizabeth Selkirk, and Dr. C. W. Forsyth, superintendents of the Birmingham mental hospitals. These tables afford evidence of the coexistence of metabolic disorder and mental disorder, the one often improving parallel with the other. It is also a matter of common experience that nearly every case of insanity where the pathological processes concerned are active, shows metabolic defects[3]; these are referable to the pituitary and hypothalamus acting as an endocrine nervous centre. It should be noted that, although the symptoms of refusal of food, delusions of poisoning, and abnormal hunger are at least partly referable to a disordered condition of the intestinal tract, they do afford *some* evidence for a coexisting disturbance of the function of the pituitary-hypothalamic region. It is therefore evident that a sphenoidal sinusitis may in certain circumstances affect the pituitary-hypothalamic region of the brain even although no *macroscopic* perforation of the pituitary fossa is present, such as occurred in the case M. L.[1]; this is supported by the comparison of symptoms and mental improvement which occurred subsequent to treatment following the demonstration of a pyogenic infection of the sphenoidal sinus in the 69 cases investigated.

F. A. PICKWORTH: CONFUSIONAL INSANITY WITH EMPYEMA OF THE SPHENOIDAL SINUS.

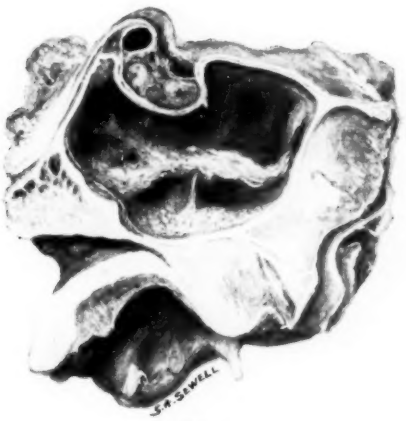

FIG. 1.

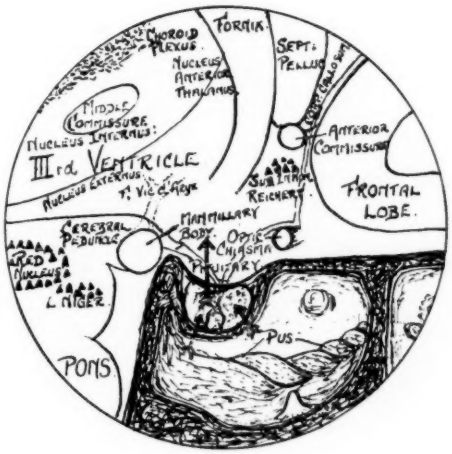

FIG. 2.

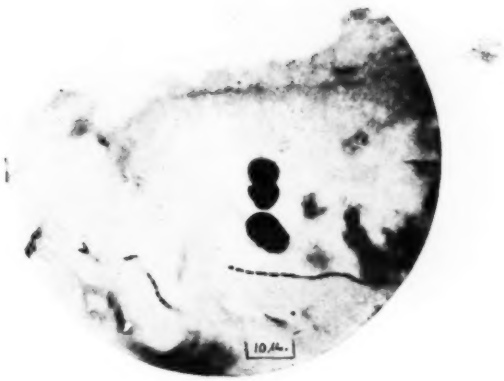

FIG. 3.

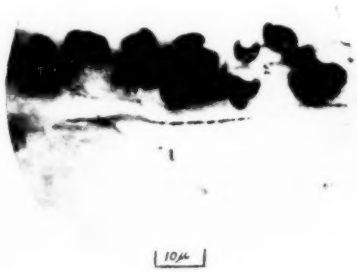

FIG. 4

FIG. 5.

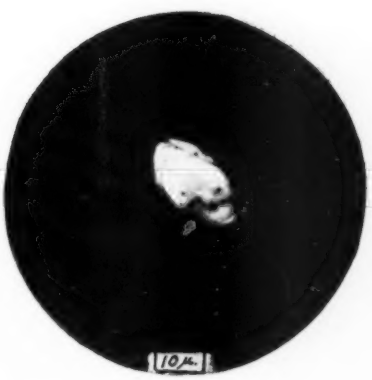

FIG. 6.

F. A. PICKWORTH: CONFUSIONAL INSANITY WITH EMPYEMA OF THE SPHENOIDAL SINUS.

FIG. 7.

FIG. 8.

FIG. 9.

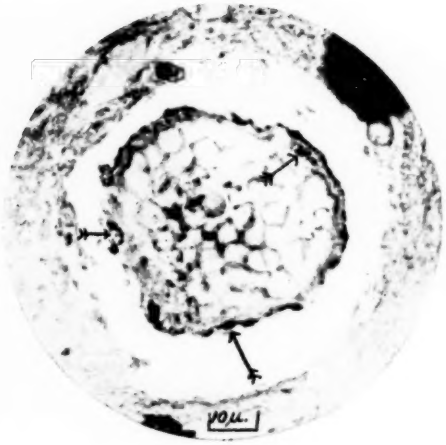

FIG. 10

FIG. 11.

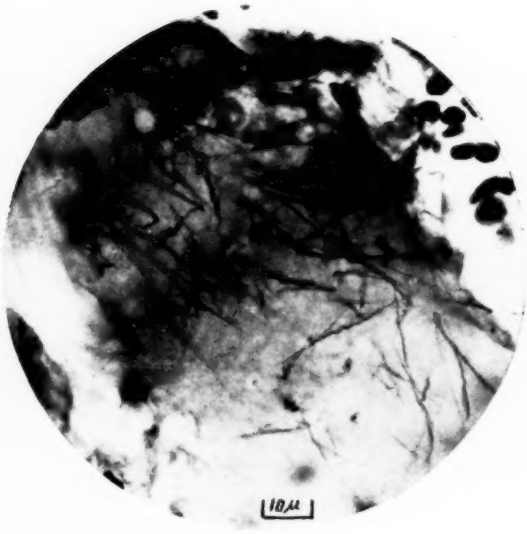

FIG. 12.

TABLE I.—*Pituitary Gland Function.* (From Schafer.)

Absent.	Deficient.	Excessive.	Injection of Extract.
Anencephalics	Dwarfs	Skeletal overgrowth	
Paralysis C.N.S.	Hibernation		
Somnolence	Drowsiness		
Lethargy	Lethargy	Mental depression and stupor	
Loss of muscle tone	(Lassitude)		
Metabolic depression	Lowered basal metabolism		Increased basal metabolism.
Subnormal temperature	Low temperature		Rise in temperature.
Respiratory failure	(Sub-breathing)		
Rapid loss of weight	Fat storage		Stops water diuresis.
Refusal of food	(Alimentary dysfunction)	Inordinate appetite	Alimentary stimulation.
Polyuria or oliguria	Polyuria	Polydipsia and polyuria	Glycosuria.
	Atrophy of endocrines, sex characteristics, and functions	Coarsening of features	Nitrogen retention phosphorus and calcium increased.
	Skin and hair feminine	Excessive hair	Prevents experimental oedema.

TABLE II.—*Nerve Centres of the Hypothalamus.*

Control the smooth muscles of: Eye, bladder, uterus, blood vessels, ? stomach, ? small intestine. Also: Striped skeletal muscle (involuntary), plastic muscle tonus.

Control the secretion of: Sweat, saliva, tears, urine, pancreatic secretion, ? gastric secretion, ? cerebro-spinal fluid.

Control the metabolism of: Sugar, protein, water, temperature, fat, trophic skin, sex-gland activity, sleep, mineral salts of the body fluids, ? acid-base equilibrium, ? digestion.

Symptoms of dysfunction: Glycosuria, albuminuria, polydipsia, pyrexia, subnormal temperature, obesity, sudden loss or gain of weight, amenorrhoea, impotence, insomnia, drowsiness, apathy, trophic ulcers, abnormal hunger, catalepsy, marasmus, hyperidrosis; salivation, seborrhoea, lacrymation, polyuria, constipation, polypnoea, retention of urine, ? achlorhydria, ? cyanosis, ? dilatation of stomach, ? dilatation of small intestine, ? sudden lassitude, ? hypochondria.

Pathological changes occur in: Diabetes insipidus, dystrophia adiposo-genitalis, narcolepsy, Graves's disease, encephalitis lethargica, Parkinsonism, ? some forms of epilepsy, ? some forms of mental disease.

TABLE III.—*Clinical Symptoms, possibly Referable to Pituitary Hypothalamic Disturbance, in 69 Cases of Insanity with Pus in Sphenoidal Sinus.*

A. PITUITARY-HYPOTHALAMIC DYSFUNCTION.

Symptoms.	Before Treatment.				After Treatment or Recovery.			
	0	+	++	+++	0	+	++	+++
Cyanosis	22	5	16	26	44	23	2	0
Pallor	19	5	15	30	45	21	3	0
Oedema	41	5	16	7	60	7	2	0
Stupor	31	8	13	17	54	12	3	0
Drowsiness	32	9	13	15	54	11	4	0
Refusal of food	36	2	12	19	64	3	1	1
Delusions of poisoning	48	2	4	15	67	1	1	0
Abnormal hunger ...	64	3	2	0	68	0	0	1
Constipation	6	3	20	40	33	31	2	3
Sub-breathers	3	20	22	24	21	34	13	0
Coarsening of face ...	48	8	11	2				
Variations of weight ...	31	17	16	5				

Other Common Symptoms—Vasomotor defect; subnormal temperature; gross fattening; asthenia (suprarenal); thyroid (excess and deficit); retrogression of sex characteristics.

0=Absent or normal. +=Slight. ++=Moderate. +++=Very marked symptoms.

TABLE IV.

B. MENTAL DISORDER, ETC.

Symptoms.	Before Treatment.				After Treatment or Recovery.			
	0	+	++	+++	0	+	++	+++
Mental disorder... ...	0	4	11	54	22	26	13	8
Confusion	11	7	12	39	43	15	7	4
Apathy	20	12	20	17	47	13	7	2
Catalepsy	48	4	11	6	64	3	2	0
Insomnia	19	5	6	39	42	22	4	1
Headache	17	6	12	34	48	15	2	4
Naughtiness	54	3	2	10	57	6	3	3
Fear processes	20	6	14	17	41	8	6	2
Influenza	39	4	19	16				
Family history	31	20	12	3				

Mental Classification.

Dementia praecox	25	Epileptic	4
Confusional	14	Mania	2
Imbecile	3	Melancholic	14
Paranoia	3	Alternating mania, melancholic	4

0=Absent or normal. +=Slight. ++=Moderate. +++=Very marked symptoms.

My thanks are due to Dr. J. M. Mackenzie for kindly showing me the case and for the clinical notes, and to the Medical Research Council for incidental help from Mr. A. T. Rennie, my laboratory assistant.

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WOUNDS OF THE HEART.

A STUDY OF THREE CASES.

BY

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WOUNDS of the heart have been recorded from classical times, and though they were then regarded as being invariably fatal, it is now well recognized that the heart is an organ which is able to tolerate mechanical interference reasonably well. Not only have wounds of the myocardium been successfully sutured,[1] branches of the coronary arteries ligated,[2] and foreign bodies extracted,[3] but in more recent years even the cavities of the heart have been explored in the hope of alleviating the mechanical handicap of a stenosis of the valve leaflets.[4]

TYPES OF FATAL CARDIAC INJURY.

While this is true, yet in war many combatants must die instantaneously from the immediate effect of wounds of the heart. In these days such injuries as result from the use of bullets, shrapnel, fragments of high explosive shells, and the like, are probably a more frequent cause of immediate cardiac arrest than statistics would indicate. Death, when it occurs instantaneously, is the result of a number of factors, notable amongst which must be the extent and severity of the lesion produced in the heart. The momentum of such missiles may be very great and the damage to the heart may be beyond all hope of repair. Sudden gross destruction with gaping lacerations of a wide area of ventricle or auricle is incompatible with life. Even a large proportion of the wounded in whom the damage is less severe must die before surgical aid can be made available, and in these shock and haemorrhage may be profound. Others, again, may survive a matter of minutes to hours, and die from the effect of the accumulation of blood within the pericardium. Blood leaking from a wound of

* Working under the Medical Research Council.

the heart muscle into the pericardial sac may raise the intrapericardial tension to a level approaching that in the great veins. The work of the heart is then greatly embarrassed by a decrease in the venous return, the systolic arterial pressure falls, and death results largely from mechanical causes. Such cases are eminently suited for surgical intervention. The risk of sepsis, secondary haemorrhage, and shock all tend to increase the death rate amongst those who survive the initial stages of the injury.

SURVIVAL AFTER HEART INJURY.

There remain to be considered those patients who survive the immediate effects of the wound, and in whom a bullet or other foreign body lies embedded in the myocardium for months or years. In such cases it is probable that the original injury was relatively slight, and that the missile, by acting as a plug, effectively checked any severe haemorrhage. It is the purpose of the following notes to record the effect on cardiac function of the presence of a foreign body retained in the heart muscle for a number of years. Three such have come under observation, and it was possible in two of the patients to study their cardiac functions thirteen years after the original injury, the foreign body being still *in situ*.

Similar cases have been mentioned from time to time in the literature. Apparently the first recorded observation of such a condition was made on the heart of a wild animal when, about the year 1600, J. C. Weber[5] described the finding of a bullet firmly encapsulated in the heart of a stag. A similar incident has been reported by Grainger.[6] "The animal was remarkably fat and healthy in condition," and had been wounded in the heart apparently some years before death, for the bullet was contained in a cyst in the substance of the muscle. That such a state is compatible with a long life is an old observation. Croly[7] mentions a Napoleonic veteran who was wounded in 1812 and lived for fifty-two years with a round bullet embedded within the pericardium. Delorme[8] quotes a case in which a bullet was found encysted in the wall of the right ventricle twenty years after wounding; the patient died of pneumonia. During the war years many similar cases came under observation, and, by the more general use of x rays, bullets and other foreign bodies have frequently been localized in the heart muscle. Vacquez and Bordet in 1918 were able to collect eight reported cases in which foreign bodies were situated in the heart and had not been extracted. A total of thirty-eight cases of war wounds of the heart came to their notice, and of these nineteen required surgical intervention on account of symptoms such as pain or dyspnoea attributable to the presence of the projectile.[9] Vance[10] has recorded three interesting cases of bullet wounds of the heart in which death resulted at a later date, and was not the result of the cardiac damage. In one of these the remarkable feature was the encapsulation of the bullet in the wall of the right ventricle with healed scars of the right auricle and lung demonstrating the route pursued by the missile in reaching its resting place. This man had been shot in the chest at least three years previously.

The older statistics[11] on the distribution of injuries to the heart show a much higher proportion in favour of the ventricles as compared with the auricles. The anatomical relation of the chambers of the heart is often considered a sufficient explanation of this fact, the ventricles presenting a larger surface to external injury. Moreover, the auricle walls are of finer texture and, being less substantial than those of the ventricles, suffer more severe damage from the lodgement of a missile. Greater laceration is to be expected in such tissue, and immediate death more probable. Statistics have been largely compiled from those cases surviving the initial injury. Mention is made of only four specimens of wounds of the auricle in the War Office collection of hearts,[12] whereas a great variety of wounds of the ventricle is shown in fourteen other specimens. In some of these the projectile had passed through the ventricles in its flight, in others it had embedded itself in the muscle, the degree of damage varying greatly. Sepsis was a fairly common complication in the specimens collected. Interesting observations on the localization of projectiles in the heart have been made by radiological examination. In a few instances the missile has perforated the muscular walls and remained free within a cavity of the heart. Whirling movements of the foreign body have been observed on screen examination, as though it were buffeted from side to side by the currents of blood within the chambers of the heart. Embolic phenomena have occurred on more than one occasion in such circumstances.[13]

While in certain cases surgical intervention for the extraction of a foreign body may be imperative, yet this is a procedure not to be undertaken lightly. If symptoms be in abeyance, then such objects as bullets or fragments of shell may well be permitted to remain innocent tenants of "the chief and most noble organ of the body."

CASE I.

A. R., now aged 35, was first seen on February 25th, 1928. He was wounded in France on August 18th, 1916. While standing in the trench he received a sharp knock on the back and then felt a sudden twinge in the region of the heart. He fell forward, but rose immediately, and after the application of a field dressing to the wound in the back he was able, a few minutes later, to walk a mile in comfort to the nearest dressing station. Later

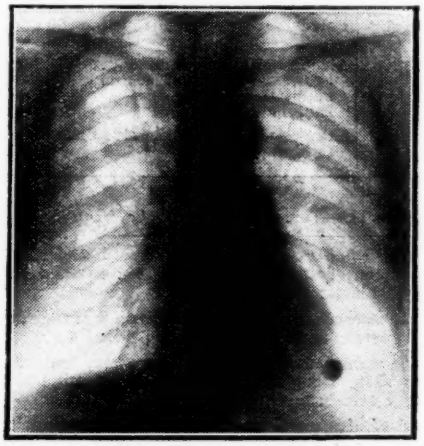

FIG. 1.—Case I. X-ray photograph (6-foot plate) showing the presence of a spherical ball of shrapnel lying within the pericardium and dimpling into the ventricular muscle near the apex.

the same day he began to suffer pain in the region of the heart, and was transported to hospital at Etaples, being under the care of Dr. Nathan Raw. He was transferred to England, and was a patient in several hospitals. The question of operation was considered, but a surgeon consultant, who saw him in April, 1917, discouraged the suggestion and told the patient that no one could

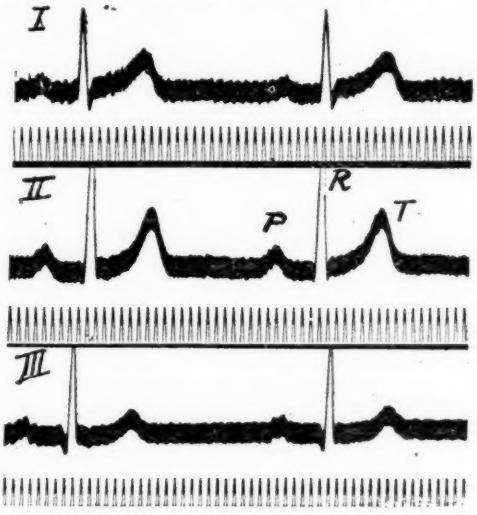

FIG. 2.—Case I. Electro-cardiogram showing the presence of normal sinus rhythm. The T waves are upright and well formed in all leads. The time-marker records 28.57 vibrations per second. 1 cm. deflection equals 1 millivolt.

guarantee him to be as physically fit without the bullet as he was with it. He was discharged on May 17th, 1917, and returned to civil life and his former occupation—a grocer's assistant. This man has been under observation for a year and has complained of no symptoms. He had had no previous illnesses of any importance, and had always been healthy.

Examination revealed a well-built, muscular man, 5 ft. 4½ in. in height and 10 st. 4 lb. in weight. There was a healed scar in the right interscapular region. The heart was not enlarged,

the apex being in the fifth space 0.5 cm. within the mid-clavicular line. The heart sounds were pure in character. The pulse was regular in rate, 64 per minute, and of good volume. The lungs were healthy, and no evidence of disease was detected. The skeletal muscles were rather flabby.

Seen again in February, 1929, he admitted that since the occurrence of the wound he had avoided all strenuous exercise, though he felt able for work, and could enjoy a round of golf without fatigue. He could play a game of football, but did not feel justified in making it a habit on account of the effort involved. He believed lack of training to be the cause of a bursting feeling in the head which he occasionally experienced after a game of football.

X-ray examination revealed the presence of a spherical ball of shrapnel lying within the pericardium and dimpling into the surface of the left ventricle above the apex (Fig. 1). Screen examination showed that it moved in a transverse direction with each cardiac contraction. A radiogram taken a year after the first examination demonstrated that the missile was in exactly the same position and had not "wandered." An electro-cardiogram taken on two occasions revealed no significant changes (Fig. 2). His vital capacity was 3,050 c.cm., being 73.8 per cent. of normal for his surface area.

CASE II.

J. B., aged 35, was seen in February, 1929. While serving in France he was wounded in the right foot at Hill 60 in 1915. After

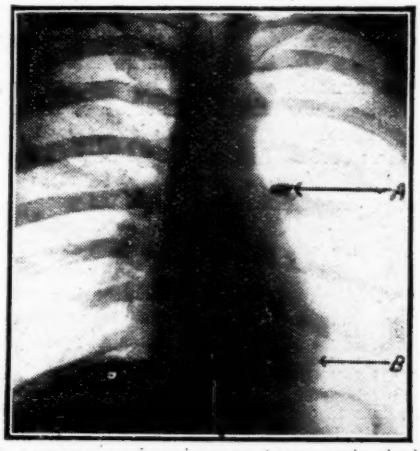

FIG. 3.—Case II. *X*-ray photograph (stereoscopic view) showing the presence of two fragments of metal (A and B) within the chest. "A" lies in the hilus of the lung; "B" is smaller and is embedded not far from the apex in the posterior wall of the left ventricle.

treatment he rejoined his unit and was again wounded in July, 1916. He was hit in the chest, fell to the ground, and was rendered unconscious for some minutes. After being in hospital at Abbeville for fourteen days he was transferred to England, and was *x*-rayed twice at various hospitals. He experienced sharp stinging pains in the chest about this time, but is unable to recall any other symptoms. These soon cleared up and he returned again to France in October, 1916. He began to notice pain in the region of his heart, and on the march was more easily fatigued. After a further period of hospital treatment in France and England he was discharged from the army in June, 1917, and returned to his old employment—that of a mechanic.

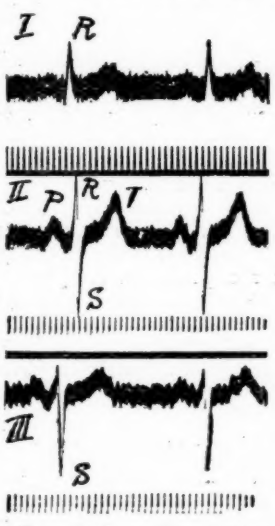

FIG. 4.—Case II. Electro-cardiogram showing the presence of normal sinus rhythm with a left ventricular preponderance. The T waves are upright in all leads. Time-marker and standardization as in Fig. 2.

In 1923 he began to have stomach trouble, and this has incapacitated him from time to time. He states that dyspnœa is only produced by sudden exertion. He lives in a top flat and has to climb four flights of stairs at least twice a day. A slight but definite degree of breathlessness is produced by this amount of exertion. He does not feel as able as formerly to lift heavy weights at his work, is sometimes dizzy, and has occasional pain over the eyes.

Physical examination disclosed a rather undernourished pale individual. His height was 5 ft. 7½ in., and weight 9 st. 8¼ lb. The heart was regular in rate and not enlarged. The apex was 0.5 cm. within the mid-clavicular line. The sounds were pure and no murmurs were heard. The pulse rate after fifteen minutes' rest was 75. Blood pressure readings were 128 systolic, 94 diastolic. There was no evidence of disease elsewhere.

During the course of a routine examination a radiogram of the chest (Fig. 3) showed the presence of a fragment of metal buried in the left lung and another smaller piece in the wall of the left ventricle. It was noted on screen examination that with each heart beat the latter fragment moved to and fro in a transverse direction. Stereoscopic radiograms demonstrated that the fragment was embedded near the posterior aspect of the left ventricle. Another fragment was found in the left lung near the hilus. An electro-cardiogram (Fig. 4) showed the presence of normal sinus rhythm with a left ventricular preponderance. The vital capacity test gave a reading of 3,825 c.cm., being 92.7 per cent. of normal for his surface area.

CASE III.

This patient was a German soldier, aged 23, who died of a fat embolus in France on November 22nd, 1918, as a result of gunshot

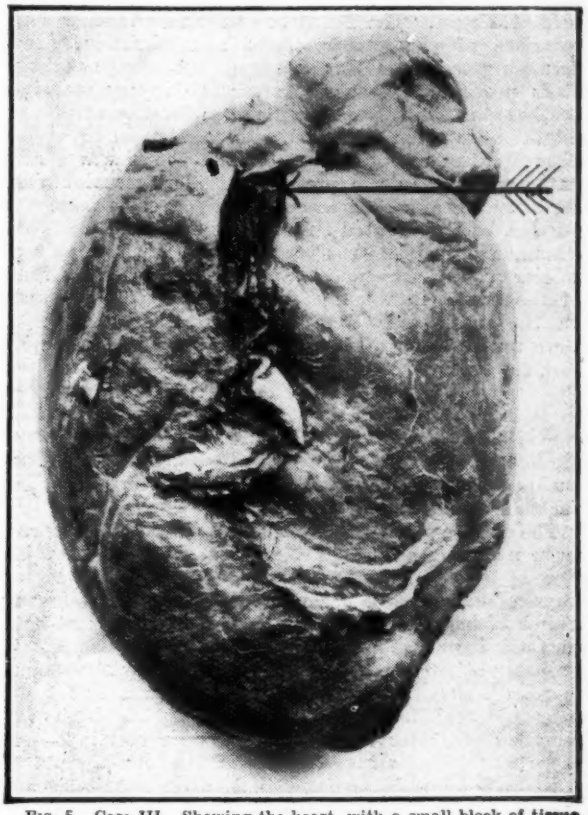

FIG. 5.—Case III. Showing the heart, with a small block of tissue cut away to expose a fragment of metal embedded in the posterior wall. The thickened and adherent pericardium can also be seen. The missile is marked by the arrow.

wounds of the left leg and left arm. A *post-mortem* examination was performed the following day. The body was well developed. There was a large open wound across the middle and outer aspects of the left thigh with a transverse fracture of the shaft of the femur above the condyles. The ends of the bone were bathed in an abscess cavity. The left humerus was fractured just above the elbow-joint. There was also an entry wound over the spine of the fifth left lumbar vertebra, which was fractured. There was some extravasation of blood into the retroperitoneal tissue.

Besides these recent wounds, examination showed the presence of a well-healed scar of a wound sustained on a former occasion. It was situated behind the left posterior axillary line. The lower border of the eighth left rib was chipped. The inferior part of the pleural sac was obliterated, and the lung was firmly adherent to the chest wall and pericardium. The posterior surface of the heart was adherent to the pericardium. A fragment of high explosive shell was lodged in the muscle of the left ventricle, just below the transverse vein. It did not penetrate the whole thickness of the muscle. There was nothing else abnormal noted in the heart or other organs. The accompanying photograph (Fig. 5) shows the missile *in situ*.

The *post-mortem* evidence in this case indicated that the heart wound was obtained some time previous to the wounds which were the immediate cause of the man's death.

These cases are of interest in that they substantiate the view that the presence of foreign bodies embedded in certain sites of the heart muscle is compatible with an active and vigorous life. Just as a foreign body situated elsewhere in the body may give rise to no symptoms, so also may a small piece of metal in the myocardium be of no apparent disadvantage to its owner. This may be of

some importance from a medico-legal point of view. It also suggests that the immediate extraction of a foreign body from the heart is not always justifiable unless symptoms are urgent.

SUMMARY OF CLINICAL FINDINGS.

The electro-cardiograms show that the spread of the excitation wave through the heart muscle is not significantly altered in its course or time relations in these cases. It is well known that after infarction of the heart muscle certain changes may occur in the electro-cardiogram particularly affecting the form of the T waves. These alterations are more frequently observed when the lower part and apex of the left ventricle are involved in the infarcted area. The T deflection is said[14] to show a certain sequence of changes in shape and direction, gradually returning to normal as healing in the muscle takes place. It is possible that shortly after the injury sustained by the heart in the above cases, some deformity of the T wave might have been observed. After a lapse of years no abnormalities are to be detected in the T waves of these patients, even in the presence of inert metal buried not far from the apex. Apparently but few cases with retained missiles have presented themselves for electro-cardiographic examination. Lea[15] has recorded one instance in a young soldier with a fragment of shell embedded near the apex of the heart, in whom complete heart-block was present. In the single electro-cardiogram published the T waves were upright and of normal form. In the case of Jones[16] the T waves were inverted in lead 2 thirteen weeks after the injury. The left ventricular preponderance observed in Case ii of this series is not considered of much significance. The heart was not found enlarged or displaced by clinical or *x*-ray examination. Pericardial adhesions over the posterior surface of the heart might possibly account for this change.

The vital capacity test indicates that these men suffered from no diminution in ability to take a full deep breath. The test has been used to some extent as a measure of physical fitness, and has proved of value in following the course of heart disease. The fact that the result obtained in Case i was a little lower than might be expected is probably attributable to his voluntary abstention from most forms of physical exercise. The man was flabby and in poor physical training. In Case ii the high reading recorded indicates that, so far as this test is concerned, there was no impairment of his respiratory powers.

In Case iii it is assumed that, after obtaining a heart wound, this man was sufficiently fit to rejoin a front line regiment. Any cardiac disability under such circumstances is extremely unlikely. The man survived a heart wound, and must have led a vigorous life thereafter, ultimately to succumb to the effects of a compound fracture of the femur.

CONCLUSIONS.

1. Foreign bodies such as bullets, shrapnel, or fragments of shells may remain buried in the myocardium for years without the production of symptoms.

2. Two cases are described in which missiles were found embedded in the muscle of the left ventricle of the heart by *x*-ray examination thirteen years after wounding.

3. Both men are in good health and fit for active work at the present time, the foreign bodies being *in situ*.

4. The electro-cardiograms presented no significant alterations in the form of the T waves or other deflections.

5. In the third case, at *post-mortem* examination, a fragment of shell was found buried in the left ventricle. It was not related to the death of the patient.

My thanks are due to Professor D. Murray Lyon, who kindly placed Cases ii and iii at my disposal. The *x*-ray photographs were taken in the radiological department of the Royal Infirmary, and I am indebted to Dr. Woodburn Morison for the reduced prints. Case i was kindly sent to me for examination by Dr. S. Lipetz, to whom I am indebted.

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THE TREATMENT OF NEPHRITIS.*

BY

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THOUGH nothing as dramatic as insulin, or as specific as liver extract in pernicious anaemia, has yet been applied to the treatment of nephritis, great advances have been made within recent years; and there comes a time when, with the gradual accumulation of new facts and theories, it is useful to review our knowledge of a subject, and bring our plan of campaign as far as possible up to date.

The more important functions of the kidney are: (1) The regulation of salt and water metabolism and the osmotic pressure of the blood. (2) The excretion of certain end-products of metabolism, especially from protein, and of other substances not required by the body. (3) The maintenance (with the help of other apparatus) of the acid-base equilibrium of the body. The first of these functions is represented clinically in the amount and specific gravity of the urine, and in the occurrence of oedema. With regard to the second function we have in the estimation of the non-protein nitrogen of the blood a delicate and important test, and one which is often most helpful in treatment and prognosis. It must be remembered that the normal kidney can, and will, excrete protein when required to do so—as, for instance, injected proteins, or haemoglobin when liberated from its normal position in the red cell.

The following classification of nephritis, based on that of Christian,[1] will be adopted in this paper.

1. Acute nephritis (oedematous, haemorrhagic, recurrent).
2. Subacute nephritis with oedema.
3. Chronic nephritis (*a*) with oedema; (*b*) without oedema; (*c*) vascular hypertension progressing into nephritis.

ACUTE NEPHRITIS.

Nearly every case of acute nephritis, whether oedematous or haemorrhagic, is a sequel of an acute infection, most commonly a throat infection, which it usually follows after an interval of ten to fourteen days. Scarlatinal nephritis, which in all cases is a sequel of a streptococcal tonsillitis, is no exception.

There are two factors at work in the production of acute nephritis: (1) the specific factor which causes the renal damage; (2) the factor of functional overstrain which determines the amount of the damage. Animal experiment[2] is quite clear on this point, for whatever the poison used—some of the recent work has been done with scarlet fever streptococcus endotoxin[3]—the amount of damage done by a given dose depends on the functional strain thrown on the kidney; in other words, on the amount of protein and salt in the diet. This applies not only to rabbits, whose normal protein intake is low, but also to animals normally carnivorous. A further point which stands out from the experimental work[4 5] is that fresh vegetables in the diet are not merely neutral in effect, but appear to have a positive influence in limiting the degree of renal damage.

The treatment of acute nephritis must therefore consist in the prevention of functional overstrain during the stage

* Abridged from an address given before the Sheffield Medico-Chirurgical Society, January 24th, 1929.

of acute renal damage, and the elimination of any existing source of further infection when the acute stage is over. The handling of the acute stage is therefore largely dietetic. The fluid intake is restricted wherever there is oedema, for if the kidney is retaining water it is obviously useless to give more water and so increase the oedema. Flushing out the kidneys is not only unnecessary and undesirable, but also impossible. The same principle applies to the treatment of the transitory anuria, which sometimes lasts for a day or two in the initial phases. If, as Volhard[6] suggests, this is due to a slowing down of the glomerular circulation brought about by congestion and oedema of the kidney, the condition is far more likely to be relieved by restriction of fluid, which will reduce the oedema, than by the administration of fluid, which will increase it. Cases of anuria in acute nephritis which I have treated by strict limitation of fluid intake have responded to their thirst by the recommencement of urinary secretion. For the rest, the diet should consist almost entirely of carbohydrate, with a minimum of salt and with a daily portion of fresh vegetable food. A limited allowance of milk is probably desirable, its small protein and salt content being compensated for by its value as a food in other ways. Milk as the sole or main article of diet in acute nephritis is, however, very far from ideal. These principles are represented in the diet sheet below:

Breakfast: Milk, cereals, tomatoes, bread or toast, marmalade.
Dinner: Potatoes, green vegetables, Yorkshire pudding, milk pudding.
Tea: Bread or toast with jam, plain fruit cake.
Supper: Biscuits or bread, salad.
No salt or butter. Total daily allowance of milk 3/4 pint; other fluids 3/4 pint (water and fruit juice).

One cannot pass over the acute stage of acute nephritis without considering the treatment of convulsions. These are practically indistinguishable from eclamptic fits, and are presumably of the same origin. True uraemia is exceedingly rare in acute nephritis, though the only certain distinguishing test is the blood non-protein nitrogen. Following Volhard,[7] who believes that these convulsions are due to cerebral oedema, I have practised lumbar puncture in their treatment with success. Convulsions may add to the immediate gravity of the situation, but are usually relieved at once by lumbar puncture and have no effect whatever on the eventual prognosis.

By the end of a few weeks of dietetic treatment most cases will be free from oedema and haematuria, and there may or may not be some albumin remaining in the urine. If the patient is discharged at this stage he will either gradually recover entirely or develop subacute nephritis, or he will return very shortly with recurrent acute nephritis—a serious disease which in a certain number of cases again becomes subacute or chronic in type. These recurrent cases will, in my experience, all be found to have the same focus of sepsis which caused the first attack. The treatment of acute nephritis is therefore quite incomplete unless the septic foci have been thoroughly eradicated. To confirm this view I have been through the records of eighty-four cases of acute nephritis and have been able to follow up and re-examine fifty-four of them. The results are briefly given in the accompanying table.

Acute Nephritis.

		No. of Cases.	No. Cured.	Percentage Cured.	Error.
Group I.	No septic focus found ...	28	21	75	±20
Group II.	Septic focus still present	12	3	25	±25
Group III.	Septic focus found and removed	14	14	100	—

In the first group I found no obvious sepsis present on re-examination, but my search for it consisted merely of inspection of the tonsils and an inquiry into history of colds, sore throats, etc., and several cases of septic foci are probably included in this group. In the rest of this group the septic factor causing the original attack of nephritis was probably of a temporary or transient nature; 75 per cent. of these cases were well, and by this I mean that they had had no further attacks of nephritis, and had on re-examination no albuminuria or casts, no oedema, and no rise of blood pressure. Of the remainder, five have had between one and seven further attacks of nephritis, others have albuminuria or oedema still, with headache, malaise, and similar symptoms. In all cases it is at least a year since discharge, and although this is a short period, nephritis which is going to recur does so, in my experience, within six months (usually much less) of the initial attack.

The next group of cases all had obvious sepsis on re-examination, usually in the tonsils. They show a recovery rate of only 25 per cent. Of the rest, two are dead (one from subacute nephritis, the other from uraemia), the others show oedema, albuminuria, or both, or have had recurrent attacks.

Most of the patients in the third group were treated by tonsillectomy, and though the group includes four patients who had previously had two, three, or four attacks of nephritis, all are well to-day. It must be emphasized that but for this treatment these cases would have belonged to Group II, with the worst recovery rate of any.

The final column of "error" is based on the statistical formula $P \pm 3\ (0.6745)\sqrt{(Pq/n)}$; where P = proportion of successes, q = proportion of failures, and n = number of cases.

Subacute Nephritis with Oedema.

This oedematous type, known to older authors as the large white kidney, and now sometimes called nephrosis, is typically unaccompanied by cardio-vascular or retinal changes, or by nitrogen retention, and in many cases there are no casts in the urine. It arises insidiously and has only three essential features—namely, oedema, albuminuria, and oliguria. Sometimes, however, such conditions as raised blood pressure and nitrogen retention occur later in the disease, or are present from the first, perhaps because the nephrotic syndrome has been secondary to a true nephritis.

Before dealing further with the disease it is necessary to consider a few theories of oedema. The capillary wall may be looked upon as a semi-permeable membrane separating the blood from the lymph. Salts—that is, crystalloids—pass through the membrane, but not colloids such as the plasma proteins. An increase of intracapillary pressure (such as occurs in heart disease) will cause more fluid to leave the vessel, and hence will produce oedema; a reduction of plasma protein, by reducing the osmotic pressure within the vessel, will act in the same way. Such a reduction in plasma protein occurs in nephrosis owing to the prolonged action of a pronounced albuminuria. The effect of loss of fluid into the tissues will be to cause the kidney to excrete less water. Hence oedema and oliguria may both be dependent on albuminuria; and, remembering that the normal kidney can excrete protein, we see that the disease may be due to an error of metabolism whereby serum albumin can no longer perform its proper functions in the body, and is therefore excreted, just as sugar is excreted by the normal kidney in diabetes. This, briefly, is Epstein's theory of nephrosis,[8 9] and he has, in fact, lately named the disease "diabetes albuminuricus." Other interesting facts pointing to the general metabolic nature of the disease are the increase of lipoid substances in the plasma and elsewhere and the extraordinary tolerance of nephrotic patients to doses of thyroxin which would be sufficient to poison a severe case of myxoedema. The changes in the kidney are of a degenerative rather than an inflammatory nature (hence the term "nephrosis"), and may be secondary to the prolonged albuminuria. This has, in fact, recently been confirmed by the observations of Jungman,[10] who removed a portion of kidney from an early case and found it to be normal.

The present treatment, on which some of the cases, even after months of invalidism, may recover, apparently completely, is as follows:

1. The diet should be rich in protein and very low in fat.
2. Thyroxin should be given in large doses by the mouth, and, if necessary, intravenously. Epstein has given as much as 10 mg. intravenously.
3. Diuretics, such as ammonium chloride, calcium (possibly in conjunction with parathormone), and novarsurol,[11] have been used with some success.
4. Blood transfusion is rational, and useful as a temporary measure.

5. The removal or treatment of any obvious focus of sepsis is as important as in acute nephritis. I have seen one case in which the surgical drainage of an empyema was followed in six weeks by disappearance of albuminuria and oedema.

CHRONIC NEPHRITIS.

Chronic nephritis is a disease unlikely ever to become curable, though prevention may some day be within our power. The type with oedema is rare, and is a mixture of the previous and following types.

In the non-oedematous case there is nitrogen retention and high blood pressure, but no difficulty in water excretion. The indications in treatment are, therefore, restriction of activities and a low protein diet; but there is no need to reduce the fluid intake, and it is wrong to attempt to reduce the blood pressure by drugs, even if permanent reduction were possible. The high blood pressure exists to keep an adequate circulation through the diseased cerebral or renal vessels. It is surprising how often the onset of uraemic symptoms may be traced to a failure of the heart to keep up the high pressure. As the pressure falls the renal function becomes inadequate, and the patient dies of uraemia before he has time to die of heart failure. In all such cases the indication is to treat the heart and raise the blood pressure again; I have recently used pituitrin for this purpose, I think with some success.

URAEMIA.

In relation to the treatment of uraemia the following points are worth noting. (1) Patients with true uraemia occasionally recover temporarily and lead a more or less comfortable life for a few years. (2) Lumbar puncture is useful in convulsions, even in true uraemia. (3) Intravenous injection of glucose solution is probably more effective treatment than the older method of injecting saline. (4) Since the respiratory type of uraemia (so-called "renal asthma") is due to a true acidosis brought about by failure of the kidney to maintain the acid-base equilibrium, treatment by two-hourly administration of alkaline sodium phosphate in 30-grain doses, as suggested by Meakins and Davies,[12] is a rational procedure.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

HEROIN AFTER ABDOMINAL OPERATIONS.

THE interesting article by Mr. A. E. Mortimer Woolf, on March 16th (p. 499), tempts me to record an experience of my own.

A woman, aged 29, and in other respects perfectly healthy, was operated on by Mr. Geoffrey Bate for a twisted left ovarian cyst on March 22nd, 1928, at 9.30 a.m. Before the operation she received a hypodermic injection of 1/6 grain morphine and 1/180 grain atropine. No difficulties were encountered either with the operation or with the anaesthetic, which was administered by Mr. C. N. Chadborn.

At 3.30 p.m., as the patient complained of some pain, she was given, hypodermically, 1/12 grain heroin hydrochloride. The matron of the nursing home, feeling tired herself, sat down in an armchair after giving the injection of heroin, intending to rest in the patient's room. Half an hour later, hearing the patient grunt, she rose from her chair, and found her cyanosed and comatose, with complete cessation of respiration. Artificial respiration was started at once, oxygen freely given, and 1/20 grain of strychnine was injected hypodermically. When seen by me fifteen minutes later the pupils were small, but reacted to light, the corneae were insensitive, the respirations nine per minute, and the pulse good. Half an hour later the patient had come round completely.

There cannot, I think, be any doubt but that had the patient been alone in the room at the time, as might well have happened, she would have been found dead. The symptoms of poisoning were attributed at the time to an idiosyncrasy, and I do not think were in any way connected with the operation six hours earlier.

Personally I agree entirely with what Mr. Mortimer Woolf writes as to the dosage of heroin, 1/12 grain of which is nearly always an adequate dose, although the tendency in recent years appears to favour 1/6 grain.

Hove. DONALD HALL, M.D., F.R.C.P.

AN UNUSUAL CASE OF ECLAMPSIA.

THE case of eclampsia reported below may be of interest for the following reasons: (1) the strictness of the antenatal care throughout; (2) the unusual delay between the confinement and the onset of the fits; and (3) the large number of fits.

The patient, who was 26 years of age, came up for first examination in the twenty-fourth week of pregnancy. Her history revealed nothing of interest, though she had nursed two patients of mine with mild scarlet fever a year previously. She was a well-built country woman, and her urine was free from abnormalities. She was asked to report at monthly intervals.

At the next attendance (thirtieth week) there was a slight cloud of albumin in the urine. She was put on a modified protein-free diet and advised more rest, and told to report in a fortnight. This time the albumin had increased, and there was slight oedema of the feet. Blood pressure 150/110; fundi normal.

She was put on a strict milk diet and confined to bed. The following week the albumin decreased and the blood pressure was 140/90. The diet was maintained with the addition of carbohydrates, and she was allowed up for two or three hours in the afternoon. The next week the albumin increased again, and she was ordered back to bed, where she remained until her confinement, which took place a fortnight before full term. She had a remarkably easy labour, lasting only four hours, and was delivered at 7 a.m. on December 16th, 1928, of a healthy female child weighing 4 lb. 8 oz. The next three days were uneventful. She felt very well and the temperature and pulse were normal. She was still on a milk diet. Without any warning, at 5 a.m. on the morning of the fourth day after labour, she had her first fit. In all she had twenty-three severe fits.

She was removed five miles in an ambulance to the War Memorial Hospital, Melton Mowbray. Before removal she was given 2/3 grain of morphine sulphate hypodermically in two separate doses. On admission her stomach and colon were washed out with sodium bicarbonate; 2 oz. of castor oil were left in the stomach, and she had 2½ drachms of chloral hydrate, in 30-grain doses every two hours, per rectum. Venesection was performed and 15 oz. of blood withdrawn; 1/50 grain of nitroglycerin was given hypodermically. She was catheterized every eight hours. She had at six-hourly intervals 1½ pints, 1½ pints, and 1 pint of saline subcutaneously.

The urine at first was solid with albumin, but this has diminished every day. Her recovery has been uninterrupted. At no time has the fundus oculi been other than normal.

LEONARD J. HAYDON, M.R.C.S., L.R.C.P.

Melton Mowbray.

A COLOSSAL OVARIAN CYST.

THE following extraordinary case seems of sufficient interest to warrant recording.

A married woman was sent into hospital by Dr. Milburn of Kingston with a diagnosis of ovarian cyst. The patient stated that she had had a swelling for five years, but since Christmas it had increased to such an extent that she could hardly get about. She suffered little or no pain, no trouble with micturition, but much constipation.

On examination, I found that she was 4 ft. 10 in. in height, and her abdomen measured 56½ in. at the level of the umbilicus. There was no swelling of the lower extremities, her heart and lungs were fairly normal, but she looked like bursting at any moment. On February 2nd, under novocain, I made a small incision to the right of the navel and soon came upon the thickened wall of the cyst. I inserted a De Pezzer's self-retaining catheter with a clamp on the end, and had the fluid drawn off gradually at the rate of one gallon every two hours. Had I removed the whole cyst at one operation I feel sure she would have succumbed. On February 3rd the pulse, which had been rapid and somewhat irregular, had recovered, so I decided to operate. By a mid-line incision I removed the cyst, which was adherent over the whole surface of the abdominal cavity, and very thick-walled and multilocular, and non-malignant.

The thick brown fluid was very carefully measured, and amounted to 55½ pints. The patient made an uninterrupted recovery and left the hospital in eighteen days.

It seems very strange in these days that anyone should develop such a huge swelling without seeking medical advice. The amount is surely a "record" for so small a woman.

JOHN W. HEEKES, M.B., B.S.Lond.,
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Reports of Societies.

THE PSYCHOPATHOLOGY OF ANXIETY.

A JOINT meeting of the Psychiatric Section of the Royal Society of Medicine and the British Psychological Society was held on April 9th to discuss the psychopathology of anxiety.

Dr. ERNEST JONES, opening, said that in psychopathology the term "morbid anxiety" was widely employed to designate a particular collection of phenomena, one which could be distinguished from those grouped under the name of fear. At least two factors served to make this distinction. The first was disproportion between external stimulus and response. In pronounced cases this was very evident—for example, in the claustrophobic distress induced by mere presence in a closed room, and, indeed, acute attacks of anxiety often occurred when it was impossible to ascertain any external stimulus of danger whatever. The second feature was disharmony between bodily and mental manifestations. As a result of general experience one allotted a certain degree of bodily disturbance to a certain degree of mental apprehension, and then noted that this proportion was in many cases deranged. This was easy to observe in extreme cases—for example, where a patient displayed extensive bodily disturbance of the kind associated with fear (dryness of the mouth, sweating, polyuria, and so on) and yet was very little aware of conscious fear. The greater prominence of bodily manifestations in cases of morbid anxiety as compared with those of normal fear was certainly very striking, and could not fail to arouse the impression of a thwarted instinct, as though some impediment to the usual expression forced the instinct to find an outlet in the bodily direction to a greater extent than would otherwise have happened. With regard to the pathology of the condition, the speaker thought the innumerable pre-Freudian hypotheses had now been discarded. Freud's first contribution to the problem was made on a purely physical basis. Studying the anxiety syndrome isolated in "neurasthenia" by Hecker, Freud separated it altogether from this disorder, and showed that it had a distinct and characteristic pathogenesis. The anxiety neurosis occurred whenever undue sexual excitation was combined with deficient opportunity for discharge. He laid stress on the element of frustration which was common to all the situations in which this neurosis arose, so that the anxiety could be described as what was found in frustrated libido. Freud assumed that in sexual excitation certain chemical substances were generated or liberated, and that when these could not be dissipated along their accustomed paths anxiety arose. The physiological basis of anxiety was generated from the physiological basis of libido by some unknown process of chemical transformation. Freud had refused to generalize from this finding, and he did not maintain that all anxiety had this source, only the morbid anxiety of the psychoneuroses. With the view that this morbid anxiety not merely arose in consequence of the repression of the libido, but was actually derived from it by some process of transformation, the speaker had at various times expressed disagreement, on the ground that there was insufficient evidence to justify postulating a process at such variance with the biological theory of instincts. He had suggested that the morbid anxiety was a perverted manifestation of the fear instinct, which, in the case of neurotic conflicts, had been stimulated to activity as a protection against the threatening libido. In his latest volume Freud had fully accepted this view, and abandoned his previous more complicated one. One was thus brought back to the simple conflict between ego and libido, in the course of which the former responded by developing a reaction of fear. Freud had further suggested that the developed dread sometimes found in situations of real danger was derived, not from the repressed libido that was directed towards external objects, as happened in the psychoneuroses, but from the narcissistic part of the libido that was attached to the ego. The speaker had applied this suggestion to the understanding of war neuroses, and had put forward the view, confirmed by others, that the only men who suffered from war shock were those whose libido, organized on a homosexual-narcissistic basis, was so attached to the ego as to become stimulated when the latter was threatened—that is, in situations of real danger. The mechanism of real anxiety in such situations was more complicated than might at first appear, and the speaker gave reasons for his description of the condition as a narcissistic neurosis, and fortified this conclusion by considerations drawn from allied fields. It was known that anxiety arose in relation to the over-development of a libidinal cathexis. The curious thing was that this could happen either from direct erotic excitation or from the opposite of this—namely, a threat to the libidinal organization. Apparently a threat caused a libidinal investment at the point threatened, as though the libido protected itself by increasing its strength. The speaker discussed the sense in which this relative excess of libido could be conceived as a danger, and entered into speculations concerning the function of the resulting morbid anxiety. He also instanced Freud's suggestion that many of the most characteristic features of anxiety would appear to be copied or perhaps even derived from the event of birth itself, in which bold and far-fetched suggestion Freud had been anticipated by Erasmus Darwin.

Dr. H. YELLOWLEES offered some considerations on the matter with special reference to the psychoses. The present conception of morbid anxiety, he said, was due to Freud, who was the first to unify its protean manifestations and to demonstrate them as the syndrome of the morbid condition. His theories and those of his followers as to the causation of anxiety states seemed to the speaker to require only intelligent and unprejudiced first-hand study to be accepted as sound by any reasonable physician. They were confirmed by clinical experience, and formed a reliable basis for effective treatment. The role of morbid anxiety in the psychoneuroses was obviously of very great importance. It played some part in practically all of them, a leading part in most, and in many it was actually the entire illness. The general opinion among many leading writers appeared to be that evolutional melancholia was the only psychosis in which anxiety played anything like a prominent part, but here it did so almost invariably. Other writers, however, held the view that anxiety might merge into other psychoses as well. The views of the analytical school were that anxiety might appear as a symptom of any form of psychosis, though it was most prominent in climacteric melancholia and the alcoholic conditions, especially delirium tremens. The speaker believed these views to be mistaken ones, and he thought it was not very hard to show where the misunderstanding had arisen. The word "anxiety" did not mean the same thing to the different schools. Freud gave the word as a psychological term and had every right to attach his own meaning to it. Freud gave an astonishing variety of detailed symptoms which he enumerated as possible manifestations of morbid anxiety, but in spite of this he offered a picture of something which, with a little care, and after a little experience, was not really hard to recognize, and that something, the present speaker submitted, was one with which the true psychosis had little or nothing to do. The morbidly anxious patient exaggerated mere possibilities, and used them as pegs on which to attach his anxiety. But it was a fallacy to think that any extension of this mechanism would lead to the delusions and dreads of the melancholic. Situations which would put a normal person in suspense left the psychotic unmoved. He had not found any psychotic whose symptoms were affected by bombing in air raids; in fact, he knew of no better aid in differentiating neurosis and psychosis than the effect of an air raid. He suggested that one would look in vain for the anxiety syndrome among psychotics. In the psychoses the role of anxiety, properly so-called, was a very subsidiary one. Borderline cases existed, but were not often to be found.

Dr. BERNARD HART said that the transformation of libido into anxiety was conceivable chemically, but as a biological conception it ceased to be intelligible. The conception that anxiety was a reaction of the ego, a striving to

protect itself against libido, was very fruitful, simply because it brought the conception of anxiety immediately into relationship with fear and dread, to which it was obviously closely allied. Fear was the reaction of the ego to external danger, and anxiety was a reaction to internal stress. In both cases the ego was protecting itself. It was more illuminating, however, to say that the essence of the reaction was not so much this protection as the failure of an adequate protection. If the response to external danger was completely adapted fear was not evoked, and if the response to internal stress was completely adapted there was no anxiety. The speaker regarded anxiety and dread as identical in essential mechanism, as in both of them the ego was failing to master a situation. The essential characters of anxiety were apprehension, tension, and unrest, and these were clearly discernible in evolutional melancholia and in some of the acute alcoholic and other psychoses.

Dr. R. D. GILLESPIE referred to the difficulty arising from the wide range of meanings attached to anxiety. The term should be used only when there was a definite consciousness of fear, though even that would not be sufficient. There was a very definite condition of mental malaise or tension which might be more or less conscious, but so big as to be practically unknown to the subject. It would be better if this condition were given a term implying mental pain. States such as this were the outcome of conflict.

Dr. W. H. B. STODDART disagreed with Dr. Yellowlees that anxiety was a characteristic of all the neuroses, since many obsessional patients never showed the anxiety reaction. Why did the patient with evolutional melancholia exhibit apprehensiveness so frequently? It was when repression of the sexual instinct became greater with the advance of life that anxiety came into play. Such cases were much relieved by potassium bromide, which he regarded as an anaphrodisiac, diminishing the degree of libido, whether conscious or unconscious.

In some further discussion Dr. J. A. HADFIELD pointed out that there seemed to be an intimate connexion between anxiety states and disorder of the adrenals. Dr. KUBIE of New York thought it useful to distinguish between anxiety as a cause and anxiety as a symptom. The absence or relative infrequency of anxiety from the psychoses still left the problem as to what was the role of anxiety in the preliminary situation. Dr. T. A. ROSS described an interesting case with anxiety symptoms, which was not one of sex repression, and could be traced back to childish terrors.

Dr. WILLIAM BROWN, speaking of shell-shock cases, said that sex repression might have caused disturbance in some of these, but in others the disturbance seemed to be adequately explained in terms of the instinct of self-preservation. Dr. Brown protested against the use of the term "libido," in relation to sex, as if it were something which could be repressed and had its own energy. Often it was a manifestation of the lack of the power of an individual to assert himself as he would like to do.

PAIN IN RELATION TO THE UPPER URINARY TRACT.

A MEETING of the London Association of Medical Women's Federation was held on March 26th, at the British Medical Association House, Tavistock Square, with Miss HUXLEY in the chair. Miss E. C. LEWIS gave an address on pain in relation to lesions of the upper urinary tract.

Miss LEWIS said that there were three varieties of abdominal pain caused by lesions of the kidney and ureter: colic; pain in the loin and mid-axillary region, due to lesions of the parenchyma; and pain at the outer edge of the rectus abdominis, at the umbilical level, caused by distension of the pelvis. Colic in its most severe form was caused by a stone in the renal pelvis or ureter. Some writers had thought that it was due to tension of the kidney capsule, others that it was a spasm of the unstriped muscle. Legueu's work on pyeloscopy seemed to support the view that there would be painful and vigorous contractions behind an obstruction, just as in the alimentary canal; oddly enough, stones in the calyces did not cause pain. Renal colic, however, did not always indicate the presence of a stone; similar attacks, though usually less severe, were caused by the passage of other foreign bodies, such as blood clots from a malignant growth, debris from a tuberculous kidney, or "showers" of crystals; also by irregular spasms in acute pyelitis and ureteritis, in Dietl's crises, and in crises of nervous origin. The differential diagnosis included biliary and appendicular colics, and those of intestinal and pancreatic origin. The radiation of urinary colic was fairly characteristic. The other varieties of pain were more difficult to diagnose; they were often not particularly characteristic of the kidney, and gave no help in distinguishing the different kinds of renal lesion. A heavy aching pain, often accompanied by tenderness, was associated with large kidney stones and with ureteric stones impacted above a stricture, or with those too large, or lying too obliquely, to be passed on; in these cases the patient was often unable to lie on the affected side. There were exacerbations due to superimposed attacks of pyelonephritis. A stone impacted in the lower end of the ureter caused vesical pain and frequency. In hydronephrosis, which was merely the evidence of obstruction to the outflow of the kidney, there was aching pain from distension of the pelvis and parenchyma and, in large tumours, from dragging on the nerves of the pedicle and surrounding structures. Often the smaller distensions were the most painful. A great number of movable and dropped kidneys were symptomless and required no treatment, others gave varying manifestations, nervous, or referable to the digestive system, including the curious one of jaundice when the affected kidney was on the right side. Some of these kidneys caused renal obstruction and infection, with either aching or colicky pain.

Tuberculosis and malignant growths were almost negligible in differential diagnosis, the former because the slight aching in the loin was overshadowed by the bladder picture, and the latter because pain did not occur by itself, but was a late symptom, haematuria being the early one. The simple acute infections were perhaps the most difficult to diagnose and deal with. The milder ones might be painless; often there was tenderness without pain. In more severe cases pain and tenderness in the loin, accompanied by fever, were the dominating features. In the fulminating cases the picture was more that of an acute abdomen.

Spasms, strictures, and kinks of the ureter, Miss Lewis said, had received more attention in America than in this country; according to Hunner they gave rise to protean manifestations. The pain, when present, was felt in the lower abdominal quadrant, since the lesion was generally situated in the last few inches of the ureter. There might be tenderness where it crossed the brim of the pelvis, and also below the broad ligament. The pain was apt to be intermittent; some patients were only troubled at night, some by day, others in the early morning. There might be a free interval lasting for months. In 75 per cent. the picture was that of bladder irritability. The accompanying kidney manifestations were those of the distention and infections caused by the obstruction. Unfortunately, examination of the urine was not always helpful, since it was said to be normal in 30 per cent. of these cases.

In the differential diagnosis of the chronic types of pain, lesions of the upper digestive tract need not be considered, since here there was no relation of pain to the taking of food. Acute perinephritis began just like acute renal infection, but the urine contained no pus, and kidney function was unimpaired. An inflamed gall-bladder was usually tender to pressure beneath the costal margin during deep inspiration. The pain of an appendix was rather more lateral than that of the ureter, and did not radiate in the same way. A lesion low enough in the ureter to simulate one in the uterine appendages would cause frequency. Calcified mesenteric glands must be remembered, and also radiation along the lower dorsal nerves, secondary to spinal or thoracic diseases.

ACUTE INTUSSUSCEPTION IN INFANTS.

A MEETING of the Devon and Exeter Medico-Chirurgical Society was held at the Royal Devon and Exeter Hospital on March 28th, with the president, Dr. COHEN, in the chair. A paper was read by Dr. J. DOUGLAS MURRAY based on eight cases of acute intussusception in infants.

Dr. Murray said that the cases occurred during a period of thirteen months; all the patients were males, healthy and robust, between the ages of 3 and 22 months. In six cases the children were less than 12 months old, and these were all breast-fed, with the exception of one child, who was being weaned during the week previous to the onset of the acute symptoms. The speaker called attention to the fact that information as to the ordinary food of the infant was rarely forthcoming in the notes of hospital cases, owing to the acuteness of the condition and the desire to remedy it as soon as possible after the child's admission. In the six cases of children less than 12 months old careful inquiries as to diet were made at the time of the child's admission, and dietetic errors or alterations were proved to exist in each instance, in spite of the mother's statement that the child was breast-fed. Dr. Murray mentioned that inquiries by Fitzwilliams into the seasonal incidence of the disease had revealed the fact that the maximum number of cases occurred in March and December, and that there was a steady decline in the incidence of this condition during the summer and early autumn months, when epidemic diarrhoea was most rampant. Moreover, the majority of cases of epidemic diarrhoea occurred in children who were artificially fed, whereas acute intussusceptions affected for the most part healthy breast-fed children; there seemed, therefore, to be no justification for regarding acute enteritis as a predisposing cause of acute intussusception. Dr. Murray mentioned that two of his patients had died, each with hyperpyrexia; in each of these cases, and in these two cases only, could the intussusception be felt per rectum. Recovery had followed in the remaining six cases, which occurred in two children, each of whom had three intussusceptions during the period of thirteen months; there was never less than four months' interval between one intussusception and the next. In each instance treatment was by laparotomy, with manipulative reduction of the intussusception. The non-operative treatment of this condition was discussed, and it was mentioned that uncertainty as to whether complete reduction of the intussusception had been effected seemed to be an insuperable drawback to this line of treatment. Finally, Dr. Murray dealt with the etiology of the condition, and stated that he regarded hypertrophy of the lymphoid tissue in the lower end of the ileum, consequent upon intestinal irritation produced by some error in diet, as the chief cause of acute intussusception in infants.

The PRESIDENT mentioned two cases of which he had had personal experience. In the first the stools passed immediately after reduction contained a stub of asparagus; in the second the last portion could not be reduced, and had to be opened up; an inflamed appendix containing pus was found inside. Mr. CANDLER said that in his opinion an elongated mesentery was the primary cause, and that dietetic errors provided the stimulus. As regards diagnosis, he emphasized the importance of emptiness in the right iliac fossa, and remarked that in some cases the lump could not be felt without an anaesthetic because it was high up under the liver or lower ribs. Under an anaesthetic, however, the hand could be pushed up higher and the lump be palpated. Mr. LOCK drew attention to the lessened incidence of acute intussusception. Mr. WAYLAND SMITH thought that if a change of diet or a dietary indiscretion was the cause of intussusception one would expect a much higher percentage of cases. He agreed with Mr. Candler that the underlying condition which made an ileo-caecal intussusception possible was a congenitally long mesentery.

Dr. MURRAY, in his reply, agreed that the cause of intussusception was a moot point, and that the most probable etiological factor was an error of diet in children with an abnormally long mesentery. He thought that the "signe de dance" was of doubtful value.

Reviews.

PROGRESS IN PSYCHIATRY.

DR. HENRY DEVINE'S *Recent Advances in Psychiatry*[1] forms a noteworthy addition to this well-known series. An author of a textbook of psychiatry is faced with numerous difficulties. The aspects of the subject are so many that it is little wonder that many authors prefer to keep their eyes closed to some of them and thus contrive to impart to their subject a superficial aspect of simplicity by the process of omitting from their reckoning all views which are not in conformity with their own, and which would therefore destroy the unity of outlook which they strive to attain. Many writers also who desire to be comprehensive content themselves with the enumeration of a multitude of theories without attempting to construct from them any sort of synthetic unity of outlook.

It is Dr. Devine's unique contribution to this subject, that he is not only widely comprehensive in his survey, but that he has sought for a common factor in each of the numerous theories advanced towards a fuller comprehension of mental disease, and has succeeded in devising from them a synthetic formulation. In a chapter devoted to psychogenesis in the psychoses this method of approach is clearly shown. The author here contrasts two types of delirious condition—one a fever delirium, a reaction to an infective agent, and the other a psychogenetic delirium occasioned by psychic trauma. He points out that although the important etiological factor in the fever delirium is undoubtedly the morbid organic state, yet the form and content of the delirium itself requires to be studied in its relationship to the emotional undercurrents of the patient's life. On the other hand, in the psychogenetic case, organic factors have also to be reckoned with, in the exhaustion and toxaemia and insomnia associated with prolonged anxiety, and thus the treatment must be both physiological and psychological, although the illness was excited by a psychic experience. The student must not fail to realize, says Dr. Devine, that he is dealing with neither a physical nor a mental disease, but rather with a condition which can only be thoroughly understood and adequately treated when both physical and mental causal relations are taken into account. Psychic and physical explanations only represent different aspects of the same reality.

Dr. Devine impresses on his readers the necessity of keeping in mind that the psychoses, like normal reactions, are the product of a number of mutually interrelated factors, both psychic and organic, and he demonstrates the various relationships which exist between disordered states of mind and such factors as a psychopathic heredity, metabolic disturbances, organic diseases, obscure infections, endocrine disorders, and morbid changes in the cells of the brain. Under the heading "Cerebral Inferiority" the author considers patients who are the subject of an inferiority of those very functions on which the integrity of the personality depends, and indicates the practical corollaries of Bolton's findings with regard to the deficient durability of the cortical neurons. In dealing with the causation of mental disease he points out that even where a whole group of cases can be attributed to a common pathogenic agent, there does not exist any direct, immediate, and invariable relation between cause and effect. General paralysis is instanced as only one of the many possible effects of the infection of the organism by the syphilitic virus, and general paralysis itself shows a great variability in respect to form, course, and outcome.

The author has divided his subject matter into five parts. Preceding these is an excellent introductory chapter dealing with the fundamentals of psychiatry. Part I is devoted to the consideration of toxic, infective, and somatic factors in the causation of the psychoses; Part II to the effects of somatic disease in psychotic subjects and a section on shock therapy and one on malarial therapy

[1] *Recent Advances in Psychiatry.* By Henry Devine, O.B.E., M.D., F.R.C.P. London: J. and A. Churchill. 1929. (5 × 8½, pp. 340. 12s. 6d. net.)

in general paralysis; Part III is concerned with the behaviour of the organism in mental disorders, and in this part the haemoclastic crisis, basal metabolism, and carbohydrate metabolism in the psychoses are dealt with. Biopsychic types are considered in Part IV, and the relationship of physique with psychological type is demonstrated. The contents of the concluding part include the psychopathic "unconscious," and psychotherapy in the psychoses.

There is a wealth of information to be had from these pages, skilfully presented and closely analysed. Needless to say, Dr. Devine has an exact knowledge of all the recent publications of any importance on his subject; and the bibliographical references provide all that is required. The book is one which we can heartily commend to the student, general practitioner, and specialist alike.

SURGICAL DIAGNOSIS.

A NEWCOMER to the well-filled ranks of surgical textbooks, Mr. C. E. SHATTOCK's *Handbook of Surgical Diagnosis*[2] is arranged under the headings of diseases, the diagnostic points of each being then given. Despite the fact that a very economical style of composition is used throughout, the book runs to nearly 700 pages—an indication of the thoroughness with which the subject has been handled. In systematic textbooks, with few exceptions, the matter is divided into diseases, followed by an account of the signs and symptoms produced, but as the order has to be reversed in practice it might appear that a textbook of diagnosis should start with signs and symptoms and lead up to diseases; the clear, concise, tabulated style adopted in this book to a large extent overcomes this difficulty by rendering the various signs and symptoms very ready of reference. Modern methods of diagnosis are well represented, although not to the exclusion of older clinical methods, but we could find no reference to ventriculography in the diagnosis of intracranial lesions. The neurologist will scarcely agree that "cerebral neoplasm gives a history of slow, steady progress for months or years without any period of improvement," in view of the fact that the clinical picture produced by such cases is so largely determined by the varying degree of surrounding vascular change. Illustrations are limited to radiograms, taken, for the most part, from McKendrick and Whittaker's *X-Ray Atlas*. Few authors realize how much radiographic detail is lost during process reproduction; such radiograms as those on pages 321 and 279, while probably excellent in the originals, have too little contrast to be of much value after reproduction. On the other hand, the photographs in the gastric and urinary sections are admirable. The book is one which the student will find of value, especially in his final year.

Books that have been established for long periods of time, provided always that each edition is efficiently revised, tend to develop a mellowness which is often absent in newer publications, and such is the character of the late Sir ALFRED PEARCE GOULD's *Elements of Surgical Diagnosis*,[3] revised by his son, Mr. ERIC PEARCE GOULD. It is forty-four years since this work first appeared, but the present edition is none the less quite up to date, references (perhaps rather too brief in view of their increasing importance) having been made to cholecystography and the use of lipiodol as aids to diagnosis. The classification of the matter in regions rather than under individual diseases is the best that could be adopted in a book intended to help the student to discover the nature of the lesion from the signs and symptoms presented by the patient. This arrangement makes the book a very readable one, especially as the author has steered clear of the tendency to prolixity, which this method of approach so often encourages. It is refreshing to find a large number of experiential paragraphs, which are missing from the ordinary textbook, as, for example, in the chapter upon head injuries: "The surgeon is more likely to overlook fractures that exist than to diagnose the injury wrongly when they are not present"—a salutary reminder to the novice. Omissions are few, but there appears to be no reference to Froyne's syndrome or to the use of ventriculography, a method of diagnosis meriting some notice, even if of limited application. The illustrations are restricted to half-tone reproductions of radiograms, and on the whole are well chosen; some, however, have fared badly during reproduction, and are on too small a scale to be of much value. The book runs to 730 pages, and the general get-up and type are good. The seventh edition is worthy of even greater success than has attended the previous issues.

[2] *Handbook of Surgical Diagnosis.* By Clement E. Shattock, M.D., M.S.Lond., F.R.C.S. Edinburgh: E. and S. Livingstone. 1929. (Cr. 8vo, pp. viii + 678; 78 figures. 15s. net.)

[3] *Elements of Surgical Diagnosis.* By Sir Alfred Pearce Gould, K.C.V.O., C.B.E., M.S. Seventh edition, revised by Eric Pearce Gould, M.D., M.Ch.Oxon., F.R.C.S.Eng. London: Cassell and Co., Ltd. 1928. (Pott 8vo, pp. xv + 730; illustrated. 12s. 6d. net.)

GERMAN MONOGRAPHS ON TREATMENT.

MID-EUROPEAN medical textbooks are tending more and more to take the form of single-topic handbooks. The practitioner's guide to metabolic disorders[4] by Professor RICHTER of Berlin, in a series entitled "Monographs on treatment," is a good example of this. It is considerably better printed and produced than many Continental books we have read. Also the translation into English is easier than that of the average German manual. There are chapters on the treatment of diabetes mellitus, gout, obesity, metabolic anomalies, and diabetes insipidus. Throughout the instructions are given in clear, dogmatic, tabulated paragraphs, and many charts and diet lists appear. The notes on the treatment of diabetes mellitus include a note on synthalin, which has a place in the regulation of diabetes in middle life. The great value of spa treatment as a prophylactic against diabetes in the "tired business man" type is stressed, and recommended in established cases of obese, constipated, gouty, and melancholic varieties of mild diabetes in later life. Balneological treatment, with precise instructions about the various German cures, is likewise fully considered in the chapters on obesity and gout. A new preparation, "lipolysin," recalling "fibrolysin," is mentioned in the treatment of obesity of endocrine origin. But beyond this there is nothing new in the book, and indeed it has no pretensions beyond its title. But it is well worth perusal by English-speaking clinicians. Acknowledgements are made to van Noorden, and to Professor Umber, the well-known Berlin authority on metabolism.

A similar volume to the above is one on remedial measures against blood loss[5] by Professor CLAIRMONT of Zürich, and Professor von den Velden and Professor Wolff, both of Berlin, who are the general editors of the whole series, have assisted. This book is, of course, mainly concerned with the indications and technique of blood transfusion. Two methods, neither of them new, are fully described and illustrated. Failing blood transfusion the authors recommend saline infusion, and of this they give the rationale and methods fully. The book is quite up to the high standard of the series, but all the information it contains is readily obtainable in similar English publications.

CHEMISTRY OF POISONS.

AUTENRIETH's *Laboratory Manual for the Detection of Poisons and Powerful Drugs*[6] is a compendium of information on the chemical properties and reactions of poisons. Toxicology, as a branch of chemistry, is founded on exact science, but its practice is an art which requires long and laborious effort for mastery. Although no book can take the place of practical experience, it must be recognized that practical experience cannot be gained without the help of books; the number that may be needed will be more or fewer according to their several characters. Autenrieth's will help to diminish the number; it is the most generally

[4] *Wie Soll der Arzt in der Praxis Stoffwechselkrankheiten behandeln?* Von Professor Dr. P. F. Richter. Therapie in Einzeldarstellungen. Leipzig: G. Thieme. 1928. (5½ × 8½, pp. 78. M.3.60.)

[5] *Die Bekämpfung des Blutverlustes durch Transfusion und Gefässfüllung.* Von Professor Dr. P. Clairmont, Professor R. von den Velden, Dr. med. et phil. Wolff. Therapie in Einzeldarstellungen. Leipzig: G. Thieme. 1928. (5½ × 8½, pp. 78; 5 figures. M.3.60.)

[6] *Laboratory Manual for the Detection of Poisons and Powerful Drugs.* By Dr. Wilhelm Autenrieth. Authorized translation by William H. Warren, Ph.D. Sixth American edition from the fifth German edition, completely revised, with extensive additions. London: J. and A. Churchill. 1928. (Med. 8vo, pp. xxvi + 698; 60 figures. 30s.)

useful that we have seen. It provides the toxicologist with abundant help for the occasions when he needs a change of method, or must have recourse to an alternative reaction for the detection of the poison sought. A poison dispersed in the fluids or tissues of an animal body may present difficulties to the toxicologist that have never occurred in other encounters with the poison. Thus with certain of the rarer poisons, particularly those of ill-defined characteristics, it is not always easy to determine how they may be isolated and recognized; and, in cases when no more is known of such a substance than has been described by workers who have studied it in its original purity, it is evident that a wide gap remains to be bridged by the manual of toxicology. It is in this respect that the volume before us appears to excel, for it provides a copious fund of information from which the worker may draw to enable him successfully to accomplish his purpose. Many books on toxicology have been written since the first edition of Taylor's. Not many of these possessed an added merit apart from the description of newer substances. Autenrieth's book not only brings the subject up to date, but is likely to be regarded as a landmark in the literature of the subject.

GUY'S HOSPITAL REPORTS.

WITH its first quarterly instalment for this year the *Guy's Hospital Reports*[7] enters on its seventy-ninth volume, and shows the admirable vigour that has made this far the longest lived series of hospital reports. Dr. A. A. OSMAN, working with the aid of a grant from the Medical Research Council, continues his studies in Bright's disease by recording some observations on the incidence and diagnosis of the various forms of acute nephritis, based on an analysis of 388 cases admitted to Guy's Hospital from 1900 to 1927 inclusive. Of the three forms of acute nephritis—haemorrhagic, diffuse, and tubal (nephrosis)—the two first are equally frequent and both commoner than the third, and all three are more often due to tonsillitis and acute infections of the upper respiratory passages than to any other cause. In a further article, "Some problems concerning the etiology of acute nephritis," he pays special attention to the importance of the "soil," observes that scarlet fever is certainly not the most common cause of acute nephritis now, and, while admitting that the hypothesis is not absolutely proved, argues that acidosis is an important, if not an essential, disposing factor. In his report of a case of hydatid of the kidney, Mr. R. P. Rowlands points out the difficulties of diagnosis from hypernephroma. Dr. G. W. Rake writes on encephalo-myelitis as a complication of varicella, a subject of great interest both in connexion with the relation of herpes zoster and chicken-pox, and with post-vaccinal encephalitis. Dysphagia due to pharyngeal paralysis is discussed by Mr. W. M. Mollison, who records thirteen cases. Dr. R. D. Gillespie gives an account of the investigation into the symptoms and signs of fatigue and exhaustion which he carried out at the Phipps Psychiatric Clinic, Baltimore, when McCunn Research Scholar in Physiology of Glasgow University. In an article rich in references to the literature Dr. Robert Donaldson, the recently elected Sir William Dunn Professor of Pathology, records a case of haemochromatosis complicated by primary carcinoma of the liver. This is followed by the report of a case of haemochromatosis under the care of Dr. Hugh Barber of Derby, with a note on the microscopical appearances by Dr. G. W. Nicholson. Visualization of the bile ducts after an opaque meal in two cases at the New Lodge Clinic is described by Drs. J. F. Venables and P. J. Briggs with the help of good radiograms. In some notes on peptic digestion Dr. F. A. Knott emphasizes the efficiency of milk as an antacid, and shows the negligible influence of such acid fluids as lemon juice and vinegar on peptic digestion. On the basis of cases at Addenbrooke's Hospital, Cambridge, Mr. W. H. Bowen discusses the etiology of appendicitis; he concludes that stagnation in the appendix is very important, that a stercolith or blocking of the lumen probably determines a fulminating attack, that in an appendix disposed to inflammation intestinal infection is prone to cause an attack, and, in view of Hurst and Knott's work, that achlorhydria is an important disposing factor. Dr. Maurice Campbell, writing from the cardiographic department, follows up previous work by giving his results on the vital capacity of forty cardiac patients who had been long under his observation.

[7] *Guy's Hospital Reports*, Vol. 79 (Vol. 9, fourth series), No. 1, January, 1929. Edited by Arthur F. Hurst, M.D. London: The *Lancet*, Limited. 1929. (6 × 9¾, pp. 125; 15 figures. Annual subscription, £2 2s.; single numbers, 12s. 6d. net.)

NOTES ON BOOKS.

"A MANUAL of tropical diseases and their care for nurses" would perhaps better describe the handy volume entitled *Tropical Nursing*,[8] by Dr. A. L. GREGG. The author has in a striking manner brought together into small compass the salient points of all the commoner tropical diseases—definition, cause, diagnosis, treatment, and nursing. Such a book is a new departure and will fill a much-felt want. In preparing for future editions, which will doubtless soon be needed, one would like to see the text carefully scrutinized for some ambiguities in phraseology, for essential details lacking here and there, and for a few minor inaccuracies. As examples, "Milk and butter should be stored in an ice-chest." How stored when no ice available? "Drink large quantities of fluid." When? In blackwater fever, "on no account sponge the patient's body unless hyperpyrexia occurs and the temperature exceeds 107° F." This statement needs some modification. To include gonorrhoeal proctitis and haemorrhoids as causes of dysentery is misleading. These, however, are minor blemishes that can easily be corrected in the course of revision.

The volume on *General Medicine*[9] of the Practical Medicine Series (1928) consists of five parts. In the survey of recent work on infectious diseases, which, as in previous years (see *Journal*, February 12th, 1927, p. 292), is undertaken by Dr. George H. Weaver, assisted by Dr. T. T. Crooks, the writers emphasize the number and importance of infectious diseases originating from animals. Diseases of the chest, excepting the heart, but including tuberculosis, are discussed by Dr. Lawrason Brown. Dr. William D. Stroud deals with diseases of the heart and blood vessels and diseases of the kidneys, and Dr. Ralph C. Brown reviews the recent literature on diseases of the digestive system and metabolism.

Dr. TINDAL'S *Gleanings from General Practice*[10] is an attempt by a practitioner who had to enter medical life when still little more than a boy, to assist younger men with "tips" learnt from experience or taught by colleagues. He instils into the young practitioner the duties of self-discipline, the habit of observation, and the right conduct of professional relationship. Hints on some general principles in medical treatment, and on the care of children and the aged, are followed by notes on cookery, on sick-room administration, and on useful remedies. There is very little that is new in the book or unobtainable from other sources, and some of the suggestions in treatment seem open to question. Is it, for example, "undoubtedly a good plan in every routine case of sickness to begin by ordering the patient to take a dose of laxative medicine"? and to advise patients to take this before sending for the doctor may be thought in some cases to be courting disaster.

A second edition of *Tuberculosis and How to Combat It: A Book for the Patient*,[11] by Dr. F. M. POTTENGER of Monrovia, California, originally brought out in 1921, and then noticed in these columns (1921, ii, 799), has not undergone much change. A new chapter entitled "The Will to Get Well" briefly insists that this attitude of mind makes it easier to bear the restrictions and self-denial necessary to attain benefit and cure, and remarks that without this help from the patient the guidance of the ablest physician may fail to prevent a simple case of tuberculosis from drifting into an incurable condition. As is pointed out in the chapter on the importance of treating early tuberculosis seriously, it is neglected tuberculosis that kills. Speaking from twenty-five years' experience in the treatment by sun baths, the author says that, as there are times when this is contraindicated, it ought not to be employed except under medical supervision. Clearly written, this book is a trustworthy guide to the tuberculous.

[8] *Tropical Nursing: A Handbook for Nurses and others going Abroad.* By A. L. Gregg, M.D., M.Ch., D.T.M. and H. With a foreword by the Hon. Sir Arthur Stanley, G.B.E. London: Cassell and Co., Ltd. 1929. (Fcap. 8vo, pp. xi + 199; 11 figures. 6s. net.)

[9] *General Medicine.* The Practical Medicine Series. Chicago: The Year Book Publishers. 1928. (Cr. 8vo, pp. 832; 72 figures. 3 dollars.)

[10] *Gleanings from General Practice.* By David Tindal, M.D., F.R.F.P.S. London: Baillière, Tindall and Cox. 1929. (Cr. 8vo, pp. x + 209; 3 figures. 6s. net.)

[11] *Tuberculosis and How to Combat It: A Book for the Patient.* By Francis M. Pottenger, M.D., LL.D., F.A.C.P. Second edition. London: H. Kimpton. 1929. (5¼ × 8, pp. 275. 10s. 6d. net.)

British Medical Journal.

SATURDAY, APRIL 20TH, 1929.

DEFECTIVE PUBLIC CLEANSING IN THE LONDON AREA.

"COMPLAINTS have been made from time to time with regard to the disposal of refuse from London. In 1925 a deputation from the London County Council urged upon the Minister, among other matters 'the need for investigation by the Ministry of Health of the question of the disposal of house and other refuse.'" When so august a body as the London County Council becomes complainant to the Ministry of Health one is prepared to discover grave occasion; but not even the exalted powers that moved and were invoked will prepare the reader for a document at once so important and so disquieting as that which has resulted from the Minister's direction to Mr. J. C. Dawes to report on the general question of public cleansing in London.[1]

It is an axiom of physiology that only when the eliminative functions are adequately performed can the life of an organism be regarded as healthy. Accumulation of the end-products of metabolic activity is poisonous to the tissues in which they originate, and excretory defects are inevitably followed by a debasement of all other vital processes. This law is not limited to the animal economy; it operates also in a community of human beings—a military camp, a settled society, a town, a village; it may, indeed, be said to constitute the principle underlying the practice of hygiene. The art or habit of communal cleanliness has been very slowly evolved, and when attained is apt to be held insecurely. Mr. Dawes's report is a revelation of sanitary failure such as in these times we are little prepared to receive. That the system of public cleansing administered by the metropolitan borough councils is expensive, costing the ratepayers of London, as it does, some £2,200,000 a year, will cause little surprise. But though the long-suffering public is prepared to submit to exactions which are the price of efficient service, we are mistaken if it will tolerate a conjunction of high charges and bad service, particularly in matters in which its civic pride is deeply involved. London, proud of the healthiness it has secured for itself, and of its acknowledged place as the most hygienic city in the world, will be shocked at the shortcomings of the sanitary administration on which it has relied to safeguard the great health interests with which it has identified itself. "It cannot be too strongly emphasized," states Mr. Dawes, "that the cleansing service in any borough or district can be administered with certainty of economy only where there is in operation a complete and reliable costing system, designed to isolate uneconomic methods." Yet so unsatisfactory is the control of the collection and disposal of refuse that "the vital economic matter of detailed unit costing is not practised in any of the twenty-nine boroughs." "On the numerous boundary roads between boroughs refuse collection vehicles belonging to two different authorities are regularly to be seen engaged on precisely the same kind of work on different sides of the same road." "No borough within whose area another borough has erected disposal works has itself a disposal plant, so that we have the position of one borough regularly sending refuse into an adjoining area for disposal while the local council forwards the whole of its own refuse into some other local authority's area for disposal, probably a considerable distance outside its own borders."

Perhaps the most startling revelations in the report concern the festering masses of muck which have been permitted to grow into gigantic heaps along the banks of the lower Thames. These heaps arise from the indefensible and unhygienic practice of dumping the crude refuse of London on the river bank. One alone of such heaps measures some three-quarters of a mile in length, perhaps a third of a mile in width, already at one point 90 feet in height, and is extending rapidly in the direction of the Tilbury Road and the Beacontree Housing Estate. On this dump "about 150 men are regularly employed; there are ten steam-driven cranes for unloading refuse and ten locomotives to haul the loaded trucks to the tipping faces; probably a thousand or more tons of house and trade refuse, street debris, and other materials are daily dumped indiscriminately on them. . . . A scarred and fissured surface extending inwards for a considerable depth from the tipping face is evidence of extensive and deep-seated fire which frequently—one might almost say regularly—reaches up to the surface and envelops the great malodorous mass in a characteristically evil-smelling cloud of smoke." "From my inspections," says Mr. Dawes, "I am satisfied that these and all the large uncovered riverside dumps are extensive fly-feeding belts, and there is evidence to show that the amount of rat infestation is very great. . . . I do not hesitate to say that the reeking masses at South Hornchurch taken together comprise the worst refuse dump in Britain and by far the biggest. . . . Once detached and separated from a populated area, they now constitute a disfiguring and damaging environment to a rapidly developing district, and the case against continuance on the present lines appears to me to be overwhelming when viewed from the standpoint of public health."

It seems incredible that such things should be within the area of Greater London, and that the outward drive of its expanding population should carry the homes of its working people into a vortex of such foulness as surely never before in the history of the world has been permitted to accumulate. It is a strange reflection that there exists apparently no public authority whose duty it is and whose powers are competent to prevent or remedy the evils of these vast dumps. Not only, then, are there defects in the sanitary services locally administered, but there actually exists no central authority responsible for tackling the sanitary problems of Greater London as a whole, of which refuse disposal is only one.

Mr. Dawes's remedy, if we correctly understand him, is the creation of an *ad hoc* authority representative of the vast number of local sanitary authorities which in the aggregate go to the making of Greater London. The water needs of London have been similarly met by the creation of the Metropolitan Water Board. Electricity, transport, police, are analogously dealt with. Problems relating to other health services such as main drainage and sewage disposal, and the control and co-ordination of the public hospitals when Poor Law institutions pass to the administration of county councils, are pressing for statesmanlike consideration and constructive solution. They are not strictly medical problems; they are problems of local government. But if evils such as

[1] Ministry of Health. *Report of an Investigation into the Public Cleansing Service in the Administrative County of London.* By J. C. Dawes, O.B.E., M.I.Mech.E. London: H.M. Stationery Office, or through any bookseller. 1929. 15s. net.

those exhibited in the report under consideration are to be overcome, if fundamental public health requirements are to be met, then a reconsideration of the problem of the local government of London, however gigantic may be the task, will have to be undertaken. It is certain that a public health scandal such as that disclosed in Mr. Dawes's report cannot be permitted to continue.

LOCAL GOVERNMENT ADMINISTRATION.

THE Ministry of Health has now issued to the councils of local government areas a circular which directs their attention to the Local Government Act, 1929.[1] The circular is in general terms, and is to be followed by others dealing in a more detailed manner with special points of administration. The Minister of Health begins by emphasizing the importance and far-reaching character of the changes which the Act effects, and enumerates the outstanding defects of the system of local government which it is designed to remedy. These are, in the main, the existence of local authorities with areas and functions overlapping one another and so giving rise to waste and inefficiency; the burden on country districts of roads whose use is largely for heavy traffic for places beyond their boundaries; the rigidity of those boundaries; the inequitable incidence of rates, especially on agriculture and industry; the chaotic relation between national and local contributions to local expenditure. Certain of the main principles underlying provisions of the Act—such as the enlargement of areas and the spreading of charge, and the assignment of functions and work to the most effective authorities—are then stated.

The later paragraphs deal in somewhat greater detail with four very important administrative points: (1) the new organization of Poor Law and public health work; (2) the co-option of experienced persons on committees and subcommittees; (3) the support of the work of voluntary associations (mainly those connected with maternity and child welfare, mental defectives, the blind, and, in Wales, the treatment of tuberculosis); (4) consultation with local bodies representative of the governing bodies of voluntary hospitals and their medical and surgical staffs. The third of these points is of considerable moment, and bids fair to give rise to relatively complicated negotiations and calculations which may have serious effects on the work done in some localities. No doubt the paragraphs of the circular in this section will have the anxious consideration of those more particularly concerned. The other three points are those which are dealt with mainly also in the "Memorandum with reference to Administrative Schemes" which has now been circulated by the Council to Branches and Divisions of the British Medical Association, to medical officers of health, and to others, and which was published in the *Supplement* of April 6th last (p. 77). There are no serious discrepancies between the views enunciated in the two documents, but this does not lessen the need for vigilance and appropriate action on the part of the medical profession in connexion with the preparation of administrative schemes by the councils of counties and of county boroughs. The Ministry's circular and the Council's memorandum alike point out that local authorities are required, in preparing their schemes for carrying out the work transferred to them from the Poor Law guardians, to have regard to securing that any assistance which can lawfully be provided otherwise than through the Poor Law, but by virtue of the Public Health and other similar Acts, shall be so provided; but while the memorandum urges that this course should be taken at once and wherever possible, the circular rather stresses the reasons why it has not been made mandatory. The Ministry's circular is clearly favourable to the exercise by councils of their powers of co-option, but seems to stress unduly the need for the presence of women on committees (a need with which the councils of authorities are already quite familiar) and the advantage of including on certain committees some of those who have had experience as guardians of the poor (which is obvious), while making mention only of the general powers of co-option which enable local authorities to appoint men or women who are not members of the councils on their Public Health Committees, and on any subcommittees appointed by those committees or by their Mental Deficiency Committees. The desirability of securing representation of the medical profession on such committees or subcommittees is not mentioned, and must therefore be pressed by the profession in each area.

The concluding paragraphs of the Ministry's circular are concerned with the co-ordination of hospital provision and use, and with the consultations which must be held before any scheme is decided upon. It is well to note the statement that "Mr. Chamberlain cannot but attribute the greatest importance to the proper carrying out of this section"—that is, Section 13. "In making the necessary institutional provision for the health of the people it is imperative that local authorities should establish the most cordial relations with, and should make the fullest use of the accumulated skill and experience of, the medical profession in regard to hospitals." It is even more gratifying to read the very important and significant final sentence: "It is the confident hope and expectation of the Minister that as procedure under Section 13 becomes established and regular, it may lead to wider arrangements for the fullest consultation between the local authority and the medical profession, not merely in regard to institutional accommodation and its use, but also in regard to those numerous developments in the health provision of the people which are implicit in the new organization laid down by the Act." The prospect so envisaged makes it all the more important that careful and well-considered steps should at once be taken towards the establishment of suitable consultative and advisory bodies in the several areas.

In connexion with the earlier and more general part of the circular, we may mention here a recently issued booklet, *Relief for the Ratepayer*,[2] by Sir Kingsley Wood. This is an admirably clear and effective exposition (of course from the Government's standpoint) of the general effects of the Local Government Act, 1929, which will be of interest and value to many who are not concerned wholly or primarily with its relation to public health. As Mr. Chamberlain says in an introduction: "In its working, local government touches the daily lives of men and women more frequently, its results are felt more quickly, its inconsistencies and injustices as well as its benefits are perceived more acutely, than the slower and more remote influences on national politics." It is important, therefore, for all to understand the changes which are now imminent in this sphere, and (as the Prime Minister says in a short foreword to Sir Kingsley Wood's exposition of the Act) to realize that the country "has within its grasp a powerful instrument for the promotion of the national well-being."

[1] Ministry of Health. General Circular on the Local Government Act, 1929. H.M. Stationery Office. Price 3d. net.

[2] *Relief for the Ratepayer: An Explanation of the Local Government Act, 1929.* By the Right Hon. Sir Kingsley Wood, M.P., Parliamentary Secretary to the Ministry of Health. With an introduction by the Right Hon. Neville Chamberlain, M.P., Minister of Health, and a foreword by the Right Hon. Stanley Baldwin, Prime Minister. London: Ernest Benn, Ltd. 1929. (Cr. 8vo. pp. 136. 1s. 6d. net.)

RADIUM POLICY.

THE report of the Radium Subcommittee of the Committee of Civil Research has just been issued as a Parliamentary Paper.[1] From this we learn that the subcommittee was appointed on July 7th, 1928, and that its reference was "to examine the radium requirements of Great Britain in relation to the present sources of supply, and to submit recommendations." Its constitution was as follows: Lord Rayleigh (chairman), the President of the Royal Society, the Chief Economic Adviser to the Government, the Master-General of the Ordnance, the Director of the Geological Survey of India, the Chief Medical Officer of the Ministry of Health (Sir George Newman), the Secretary of the Medical Research Council (Sir Walter Fletcher), the Government Chemist, the Secretary of the Department of Scientific and Industrial Research, together with assistant secretaries of the Department of Health for Scotland, the Colonial Office, and the Ministry of Health. The report bears date March 7th, 1929, and is divided into nine sections. The first section describes the procedure adopted during the inquiry; the second discusses the new importance of radium in medical treatment; the third describes the existing supply of radium available for medical treatment in Great Britain and the methods adopted for its distribution; the fourth estimates the amount of radium at present required for medical purposes, and the fifth the relatively very small amounts required for the Fighting Services and for physical research; the sixth indicates the sources of radium production throughout the world, and the seventh discusses the cost of production and the price of radium. The eighth section outlines a proposed organization for the distribution of a central stock of radium for medical purposes, and the ninth summarizes the subcommittee's conclusions and recommendations. This eagerly awaited report is a document of great medical interest and importance, of which we shall publish a full account next week; we can only give now, while going to press, an outline of the final section.

The subcommittee's conclusions, in brief, are as follows. Knowledge of the properties of radium for the treatment of cancer and of the technique of its application has advanced very rapidly in recent years, and an increasing amount of radium is likely to be required for medical purposes in Great Britain. The Government's stock which is available for these purposes is 2.2 grams, while the amount belonging to hospitals and private practitioners is estimated at about 22.7 grams, making a total of nearly 25 grams. To meet present needs some 50 grams in all are required (that is, an immediate addition of about 24 grams to the existing national stock), but owing to lack of trained personnel and the inadequacy of existing hospital accommodation probably no more than 20 additional grams could be effectively absorbed for medical purposes by the end of 1930. Full advantage can be obtained from a given quantity of radium only when it is constantly in application—namely, when it is transferred from one patient to another with a minimum of delay—and such conditions are only to be found in centres with the necessary specialist personnel, technical equipment, and available beds. There is at present no common policy between the hospitals in acquiring radium, existing private stocks having been acquired for particular localities without reference to the needs of the country as a whole. A central stock of radium and some systematic method for its distribution are urgently needed. At present the Belgian Congo is the only source from which additional supplies for medical purposes are obtainable in any quantity. With adequate organization it should be possible to purchase radium at substantially less than the existing market price.

In the light of these findings and conclusions the subcommittee recommends that steps should be taken at once to acquire by instalments 20 additional grams of radium element for medical purposes; that a body entitled the National Radium Trustees should be appointed to hold the funds provided by Parliament or otherwise, and to purchase therewith and hold radium for use by a body of experts to be called the Radium Commission. The Trustees should consist of the Lord President of the Council, the Minister of Health, the Secretary of State for Scotland, the Presidents of the Royal Society, the Royal College of Physicians of London, the Royal College of Surgeons of England, the Royal Society of Medicine, and the British Medical Association, and the Chairman of the Central Liaison Committee of Voluntary Hospitals in Scotland, with two members to be co-opted later, if so desired, by the Trustees. The Radium Commission appointed by the Trustees should consist of a chairman (of distinguished public position, but not necessarily a member of the medical profession) nominated by the Trustees; four other persons nominated by the Trustees; and four representatives nominated, one each by the Minister of Health, the Secretary for Scotland, the Medical Research Council, and the Department of Scientific and Industrial Research. The powers and duties of the Commission should be "to deal with the custody, distribution, and use of all radium held by the Trustees, having regard to the advancement of knowledge, the treatment of the sick, and economy of use; and, in particular, to consider and approve plans submitted to them for the use of radium for the purposes of medical treatment and research, and to make the necessary arrangements for the supply of radium for such uses." Lastly, the subcommittee recommends that the Radium Commission should arrange with the National Physical Laboratory for the custody of the radium put at the disposal of the Commission by the Trustees when this is not actually in use for medical purposes, its preparation in form for use, and its recovery from such preparation on return from loan. In the body of its report the subcommittee records its conviction that the success or failure of this scheme, if adopted, will turn largely on the personnel chosen to form the Radium Commission, which should be composed of the best available experts in the several sciences underlying radium therapy, its membership being such as would enable it to work harmoniously both with the medical profession and with the Government departments concerned.

It will be seen from our Parliamentary Notes this week that on April 16th the Chancellor of the Exchequer said that the Government accepted the financial recommendations of the subcommittee. The purchase of 20 additional grams of radium before 1930 would cost about £200,000, of which the Government would contribute up to a maximum of £100,000, on the basis of £1 for every £1 privately subscribed. Mr. Churchill indicated that the Government had not yet decided upon the precise form of the holding and distributing bodies which would be set up to control the use of the 20 grams. He said that the subcommittee's recommendations on the subject of organization had been accepted in principle, but "the precise form of the organization will remain open to further discussion." The Government has been well advised to defer making any declaration of policy on this part of the report. It is clearly of great importance that the personnel of the Commission should be such as to inspire confidence both within the medical profession (on whose members will fall the task of working the proposed scheme) and among the general public (which is asked, directly by its benefactions and indirectly by taxation, to pay for it) that the radium purchased will be distributed to the best advantage.

[1] Cmd. 3303. H.M. Stationery Office. 1929. 6d. net.

A CONSERVATIVE BUDGET.

FINANCIAL policy has been the dominant factor in statecraft for the past decade, and practicability in terms of monetary resources the touchstone by which other policies have been brought to the test. It follows that a Budget produced on the eve of a General Election must exhibit with more than ordinary clearness traces of its political parentage. Mr. Churchill's well-earned reputation for independence of mind and courage has always created special interest in the unfolding of his financial proposals—an interest heightened this year by the probable effects on election prospects and by the current belief that this will be his last Budget. As is inevitably the case, he is accused of giving weight to considerations of electioneering strategy rather than of industrial policy. This, however, is an aspect of the question with which we have no concern. The annual Budget statement is not infrequently regarded as a long and comparatively prosy prelude to the brief announcements of forthcoming fiscal changes with which the statement closes. But the review of trade conditions, industrial progress or retrogression, national indebtedness, and other important factors in the health of the body politic will repay study. A Chancellor of the Exchequer has unique sources of information and advice, and his considered weighing up of indications of the future trend of events has special value. This is particularly the case with the present Budget, in view of the fact that Mr. Churchill was in a position to review the results of five years' practical study of national problems, and also because the nature and scope of the financial arrangements proposed necessarily indicate the means of approach towards the solution of other problems not mainly, or at any rate not exclusively, financial in their nature. Making appropriate allowance for the optimism natural in the circumstances, Mr. Churchill's review is distinctly encouraging. Increases in savings of the small investor class, decline in cost of living while money wages are being maintained, the transfer of purchasing power from the consumption of alcoholic liquors to the purchase of commodities or pleasures more conducive to physical and mental well-being, the improvement in the balance of trade, the rise in bankers' deposits, and other signs of increasing prosperity were touched on, and the conclusion is drawn that "the saving and consuming power of the people have maintained a steady advance." The road to industrial recovery proves arduous, and is encumbered by obstacles foreseen and unforeseen. All parties are alike desirous of arriving at the goal as quickly and with as little suffering as possible, but the methods of progress put forward vary considerably. The Labour party suggests that progress would be more rapid if some sections of the community would make greater sacrifices and put a more strenuous shoulder to the wheel; the Liberal party suggests that the time has come for some exceptional effort to reach the brow of the hill. Mr. Churchill's Budget makes it clear that the Conservative party regards the task as one to be achieved by slow and uncomfortable stages, lightened here and there by minor adjustments of the burden to be carried or by the removal of hampering restrictions, but incapable of rapid attainment by heroic measures. The financial proposals as a whole are clearly based on that assumption. They include one or two surprises, and will cause disappointment in some quarters. The most noticeable single proposal is the abolition of the tea duty, which absorbs over half of the margin of estimated income over estimated expenditure. There are, of course, many advantages in making a clean sweep of a particular tax instead of reducing it, including the greater convenience to traders and the financial saving that results from the scrapping of the machinery of collection; but the repeal of that tax has made a heavy inroad on the total amount available for remission. The financial readjustments in connexion with the brewing and distilling trade are somewhat complicated. On the one hand, those trades are to be required to pay over sufficient additional tax to compensate for the benefits they will receive under the de-rating scheme; on the other hand, a reduction in liquor licences payable by publicans and beerhouse keepers is given to an extent which will cost the Exchequer about twice as much as will be gained from the brewers and distillers. Seeing that most licensed houses are owned by the brewing companies, it is probable that a substantial part of the licence relief will sooner or later operate to benefit the brewers as landlords of the property. Time alone can show how these adjustments will work out, but at the moment the necessity for the changes is not very clear. The agricultural interest is benefited by the expediting of the de-rating proposals by six months, and agricultural land will now be freed from the burden of local rates as from April instead of October of this year. The railway companies are dealt with somewhat ingeniously; they are to be relieved of the Railway Passengers Duty on condition that the capitalized value of that relief is expended on improving their equipment, and in that way is passed on in part to industry generally. The amount expended on roads is to be increased, and other minor changes are made with a view to assisting various branches of industry—for example, the herring fishery trade is to be assisted by the reduction of harbour dues. The income-tax payer is left unrelieved. Mr. Churchill pointed out that this year the effect of the increased family allowances given last year will be felt to the full extent for the first time, and that he could not give further relief. The facts of the case bear him out only too clearly. Income tax now yields such enormous sums as compared with pre-war years that any substantial reduction would cost the Exchequer an amount which would be prohibitive. The income-tax payer's patience is passing into an adage, and he will have to continue to wait, with such shreds of hope as he can contrive to retain, until the weight of the war burdens has been perceptibly lightened or the recovery of industrial prosperity brings into view new harvests for the reaping of some enterprising and ingenious Chancellor. The 1929 Budget is no epoch-making or sensational document; it strikes us rather as an attempt to deal with the immediate necessities of the national position in a practical manner, and to provide opportunity for trade recovery in the future, not by speculative or heroic measures, but by giving as far as possible a fair field for individual effort and by distributing relief from taxation as widely as the circumstances permit. If caution be necessary in national finance—and history has several chapters on that lesson—then within the limits set by the facts of the situation Mr. Churchill seems to have grappled with his problems in a manner which deserves its full measure of praise.

LOOKING AT THE STOMACH.

SINCE the traditional case of Alexis St. Martin there have been attempts to make gastroscopy easy for the practitioner and for the patient, but it is doubtful whether the results obtained have justified the discomforts inflicted or the dangers involved. A simplified technique has been described in a recent pamphlet[1] by William Sternberg of Berlin, who uses a specially modified form of cystoscope and claims originality for his method, principally in respect of the position adopted by the patient. Anaesthesia is not recommended, general anaesthesia being, in his view, dangerous, and local anaesthesia demanding complicated apparatus and adding to the risk of the whole procedure. The use of sedatives such as morphine is condemned. Following the

[1] *Technique and Method of Use of Sternberg's Gastroscopy and Gastroscopic Treatment.* By William Sternberg, Berlin. London: John Bale, Sons and Danielsson, Ltd. 1929. (6 × 9¾, pp. 19; 7 figures. 3s. 6d. net.)

usual preparations, which include attention to the hygiene of the mouth, washing out the stomach, and, to prevent steaming of the optical lenses, adjusting the temperature of the apparatus and the surroundings, the patient adopts the knee-elbow position, which, according to Sternberg, allows the maximum freedom of movement and enables the pylorus to be brought quickly into focus, and the gastroscope is passed. The exact technique of passing the instrument is set out in detail, but, as with most difficult manœuvres, it is probable that an actual demonstration would be easier to follow than a written description. Once the instrument is passed the patient is allowed to change his position in almost any way, the examiner following closely so as to bring various portions of the stomach into view. Finally, air, which has been introduced for the necessary distension of the stomach, is removed by means of a special two-way stopcock incorporated in the apparatus, and the tube is withdrawn by the patient again assuming the knee-elbow position and attempting to straighten his back, whereupon "the instrument practically drops out spontaneously." Sternberg has passed the instrument on one of his patients about 500 times in the course of four years to demonstrate a pyloric ulcer, but he emphasizes that he does not apply his operation to "patients" who are specially trained and paid for the purpose. This pamphlet gives a very clear idea of how the interior of the stomach may be visualized, but many reading it will wonder whether there is much to be gained by the procedure, and, in view of the condemnation of anaesthesia, whether there is any significance in the statement on page 7 that "it is . . . easier to perform gastroscopy on women and children than on vigorous men."

HARVARD UNIVERSITY CANCER CAMPAIGN.

THE sixteenth annual report of the Collis P. Huntington Memorial Hospital for Cancer Research and of the laboratories of the Cancer Commission of Harvard University covers the year ending June 30th, 1928. There was a fall in the number of new cases from 1,753 to 1,725; such a reduction has been anticipated for some time in view of the fact that other institutions for dealing with cancer cases are coming into existence in Boston. Mention is made in the present report of the collaboration of Dr. Mueller with Dr. W. E. Gye, both at Harvard and also in London. Although no complete agreement was reached with regard to the bearing of the data obtained by these joint experiments, a detailed report is to be issued later by Dr. Mueller. A number of interesting and important facts have been defined which, it is believed, will have a bearing on the whole subject of filterable viruses. Dr. Duane has been studying in Cambridge, Massachusetts, as well as at the Huntington Hospital, the accurate measurement of x rays for therapeutic purposes. A research assistant has been appointed under him to make a detailed study of the physical and chemical changes brought about in living tissues and chemical substances by exposure to x rays. A new and more powerful apparatus for the production of high voltage x rays has been designed by Dr. Duane and constructed. From November, 1927, to August, 1928, the treatment of cancer by the injection of colloidal lead was investigated, four beds in the research wards of the Massachusetts General Hospital having been set aside for this purpose; a final report has not been issued yet. The diagnosis service for the State Department of Health continued as in previous years, 2,519 specimens being examined, in addition to 824 specimens for the Huntington Hospital. In April, 1928, a cancer campaign was arranged under the auspices of the American Society for the Control of Cancer, the Massachusetts Medical Society, and the State Department of Public health; in this the staff of the Huntington Memorial Hospital co-operated actively.

VACCINATION FOR BRITISH VISITORS TO FRANCE.

IT was announced in London on Tuesday, April 16th, that in consequence of the present outbreak of severe small-pox in England (referred to at page 742) the French Government, in application of the clauses of the Franco-British Convention of 1926 dealing with certain contagious diseases, had issued an administrative order requiring all passengers from British ports arriving in France after midday on April 18th either to produce a statement signed by a medical practitioner that they had been vaccinated within the past two months, or to be vaccinated on landing. On April 17th the British Embassy in Paris handed a note to the French Foreign Office urging that the order be suspended pending further consideration of the matter and consultation between the two Governments. At a meeting of the French Cabinet held on the same day M. Loucheur, Minister of Labour, stated that he had decided to accede to the British request, and that the British and French health authorities would meet forthwith and confer as to the best precautionary measures to be taken. He further stated that the suspended order had been issued by the local authorities of the Channel ports, acting under Article 42 of the International Sanitary Convention, and without previous reference to him. This is the situation as we go to press. The French Government has acted wisely in suspending a hastily conceived order, and it is likely that the health authorities of the two countries will speedily agree upon the most effective measures for preventing the spread of the present epidemic to France.

INTERNATIONAL SOCIETY OF SURGERY.

THE eighth Triennial Congress of the International Society of Surgery will be held in Warsaw from July 22nd to 25th, 1929. The subjects for discussion are the causes and mechanism of post-operative embolism, the results of resection of the stomach for gastric and duodenal ulcer, the treatment of exophthalmic goitre, and the reparative surgery of the hip-joint. The society has chartered a liner of the Compagnie Générale Transatlantique for the use of members; this will leave Zeebrugge on July 12th, and after calling at Ymuiden, Copenhagen, Riga, Helsingfors, Stockholm, and the Island of Gothland, will arrive at Dantzig on July 21st. Warsaw is within eight hours' railway journey from Dantzig. Messrs. Thomas Cook and Son are arranging inclusive terms for the stay in Warsaw and for the journey from London for those members who do not wish to join the preliminary cruise, with an extension to Vienna, Budapest, Prague, and Leipzig after the congress for those who desire it. As the hotel accommodation is limited early booking is desirable. The British delegate is Mr. J. E. H. Roberts (26, Harley Street, W.1), with whom intending participants should communicate.

ART EXHIBITION AT THE MANCHESTER MEETING.

BY the kindness of the Salford Corporation, it has been made possible to arrange for an art exhibition to be held at the Salford Art Gallery in Peel Park during the Annual Meeting of the British Medical Association in Manchester next July. It is proposed that this exhibition should consist of works of art (painting, sculpture, china, etc.) belonging to or executed by members of the profession, or having especially medical interest or association; and the Executive Committee will be glad to hear at an early date from any member willing to lend, or influence the loan of, any such work of art. The Salford Corporation has undertaken the insurance and transport free of cost to the lender, the only condition being that objects lent must be left on view for two months. All communications on this subject should be addressed to the Chairman, Local Entertainments Committee, B.M.A. Annual Meeting, 33, Cross Street, Manchester.

OPHTHALMOLOGICAL CONGRESS.

THE annual congress of the Ophthalmological Society of the United Kingdom was held in London, at the House of the Royal Society of Medicine, from April 11th to 13th, under the presidency of Mr. CHARLES HOWARD USHER. Each morning was devoted to short papers, about twelve of which were read and discussed, and there were two set discussions. A clinical meeting was held at the Royal Westminster Ophthalmic Hospital, and the congress concluded with a visit to the National Physical Laboratory. Concurrently with the congress an exhibition of ophthalmological instruments and apparatus was open at the House of the Royal Society of Medicine, and an interesting museum of historical and other exhibits was also arranged.

Ocular Tuberculosis.

A well-sustained discussion took place on the subject of ocular tuberculosis. Sir ARNOLD LAWSON, in opening, pointed out that this was essentially a surgical condition, and it was extremely uncommon to find it in relation with pulmonary phthisis. Infection might be extraocular or intraocular, and the former either primary or secondary. He used the word "primary," at the same time doubting whether tuberculosis of the conjunctiva could ever properly be so termed, but the diagnosis of this so-called primary condition could give rise to no confusion. The association of tuberculosis with interstitial keratitis might occur either as a mixed infection or as a pure tuberculous infection, but the former was much more common than the latter. The treatment of ocular tuberculosis had to be considered from two points of view: general and local. The general treatment included treatment on general constitutional lines, tuberculin, and phototherapy. Treatment by tuberculin had engaged much attention and brought out many differences of opinion. From his personal observation he was absolutely certain as to the value of this treatment, but care had to be taken that the case was suitable for its employment at all, for it was a dangerous remedy, and the proper manner of its employment, as to strength and frequency of dosage, was very important. On all these points the ophthalmic surgeon needed the advice of an expert physician. As to phototherapy, he could speak of its value with children, though not so positively with adults, but treatment must be carried out on closely supervised lines. In unskilled hands it was a dangerous method. The recent pronouncement of the Medical Research Council was based on the lack of evidence to support any claim for phototherapy to effect something which could not be effected by other less artificial means. The speaker thought the inference a little unjust, for he had never known phototherapy claimed as a means of treatment which would supersede good food, exercise, fresh air, and so forth; it was admittedly only a further addition to the resources of treatment.

Dr. R. A. YOUNG offered some observations on the diagnosis and treatment of tuberculosis in general, with only incidental reference to eye conditions. He expressed a good deal of scepticism with regard to the information to be obtained by specific tuberculin and serological tests. His own practice was to rely largely on clinical findings. As for phototherapy in treatment, he was convinced that where there was active or smouldering lung tuberculosis artificial sunlight could do harm. It could produce very much the effect of an overdose of tuberculin. On the other hand, he had witnessed its great effectiveness in the treatment of surgical tuberculosis. He had also used, though not for ocular cases, sodium morrhuate; sometimes this seemed to help, but at other times he thought it could do harm.

Mr. S. BROWNING, in speaking of the treatment of tuberculosis of the conjunctiva, mentioned that he had used bovine tuberculin almost as frequently as human tuberculin in eye conditions during the past fifteen years. He spoke of the difficulty of the diagnosis of intraocular tuberculosis, which depended on a tentative clinical diagnosis, backed up by bacteriological tests, and finally decided by a sort of trial and error treatment. While questioning as to how far one was justified in calling an eye condition tuberculosis because it improved under tuberculin, he had little doubt as to the value of tuberculin in the treatment of eye conditions which for one reason or another might be given the tuberculosis label.

Mr. A. L. WHITEHEAD expressed the belief that many cases with vitreous haemorrhages were of a tuberculous nature. He had had cases in which these haemorrhages preceded by some months any evidence of tuberculous infection. With regard to phototherapy, he thought it tragic to go to a clinic and find children sitting around the lamp, some of them getting badly burned, while others were receiving no benefit at all. Every case had a suitable dose, and it was an essential preliminary of treatment that that dose must be found for it.

Mr. W. S. DUKE-ELDER said that if ocular tuberculosis was of a surgical type a good response might be expected from ultra-violet radiation. He gave some account of three years' experience at the clinic at Moorfields, where light treatment was combined with tuberculin administration. In thirty-three cases in which there was reasonable certainty that the condition inside the eye was tuberculosis the result of the combined treatment was that in 85 per cent. of cases the eye became quiet after an average of five months' treatment; in 6 per cent. it was very much improved, and in 9 per cent. the disease was still active. Among the quiet cases there had been 18 per cent. of relapses, but these were readily controlled by a fresh course of treatment.

Dr. GEORGE MACKAY of Edinburgh was of opinion that the use of tuberculin ointment was well worth a trial as a substitute for the continued use of subcutaneous injections.

Minor Eye Injuries in Industry.

A report on the subject of minor eye injuries in industry, the economic loss they occasioned, and the means of their prevention, was brought forward by Mr. B. CRIDLAND of Wolverhampton. He showed statistics suggesting that, in spite of increased insistence on protection, the number of these cases was multiplying. Little information up to the present had been forthcoming as to the economic effect on industry of these minor accidents. Some attempt to answer the question in a limited area had lately been made by a subcommittee of the Council of British Ophthalmologists. Reports of minor accidents involving less disablement than a week had been collected from the casualty and out-patient departments of hospitals situated in certain special areas. The information related only to 426 cases. Rather more than half of these cases were in workers whose occupation involved exposure to very small flying particles (such as workers at grindstones), where the risk of serious injury was not great, the lesion almost always being a very small foreign body on the cornea. About a quarter of the total number were found in occupations involving exposure to chips of metal, and here there was risk of serious injury. The remainder consisted of a miscellaneous collection of occupations, the accidents being mostly foreign bodies on the cornea, with a certain number of abrasions and burns. Information as to protection was obtained in 406 of the cases. In 70 per cent. protection was not provided; in 19 per cent. it was provided but not used, and in 11 per cent. protection—goggles, machine-guards, etc.—was in use, but was evidently ill-fitting or inefficient. Some idea of the time lost was obtained: 371 of these cases involved a loss of from one to two hours; 48 of from two to eight hours, and 7 of from eight to forty-eight hours. The total working time lost in the 426 cases was 992 hours, or 124 days of eight hours each. There were three lines of prevention: mechanical guarding, education of the workmen, and reconditioning of the machinery so as to get rid of the flying particles. Goggles which were well fitting gave 100 per cent. protection.

The ensuing discussion turned upon the provision of protective appliances, several of which were exhibited in the museum. One speaker said that, after seeing the suggested goggles, he had every sympathy with the workman who decided to do without them and take the risk. Another suggested a vizor in light alloy, similar to the chain vizor used in the war, but of less heavy metal, and it was stated that one industrial firm at Bristol had provided for its

men a vizor made of black silk gauze, and that it was rather surprising how effectively this material intercepted foreign bodies.

Among other events of the congress programme were a discussion on heterophoria, opened by Mr. E. MADDOX and Mr. C. GOULDEN; a demonstration by Miss IDA MANN of the phylogenetic value of the lower retinal field; and a lecture by Mr. G. F. ALEXANDER, on the great antiquity of removal of cataract from the eye, and suggestions on the instrumentation of cataract operations.

Scotland.

Central Liaison Committee for Voluntary Hospitals.

THE Secretary of State for Scotland has appointed a committee, consisting of Lord Mackenzie (chairman), Mr. Charles F. Henderson, Provost Alexander M. MacEwen, Mr. James Macfarlane, Dr. D. J. Mackintosh, Major-General James Thomson, A.M.S.(ret.), Ex-Provost James Thomson, and Sir David Wallace, F.R.C.S.Ed., with the following terms of reference:

> To be for the period to March 31st, 1932, the Central Liaison Committee for Voluntary Hospitals in Scotland to act in liaison between the Department of Health and the Regional Committees of Voluntary Hospitals in Scotland, to assist in keeping the department in touch with voluntary hospital opinion, and, in the development of hospital services in Scotland, to foster co-operation between the voluntary hospitals and the local authorities in each region.

The minute of appointment formally reconstitutes the committee that was set up at the meeting between the Secretary of State and representatives of the Scottish voluntary hospitals in December, 1927. During negotiations on the hospital clauses of the Local Government (Scotland) Bill the committee suggested to the Secretary of State that the Liaison Committee would be strengthened for its work in conserving the voluntary system and promoting co-operation through the changes which will follow on the passage of the bill if its constitution and status were more exactly defined. The minute incorporates the committee's suggestions. The present members will hold office for three years, and future appointments will be made by the Secretary of State on the nomination of the Voluntary Hospital Regional Committees. The voluntary hospitals have set up regional committees in each of the five regions, with centres at Edinburgh, Glasgow, Aberdeen, Dundee, and Inverness.

Sir David Wallace is a director of the Royal Infirmary and other hospitals in Edinburgh, and chairman of the South-Eastern Regional Committee; Mr. James Macfarlane is chairman of the Glasgow Royal Infirmary and chairman of the Western Regional Committee, and Dr. D. J. Mackintosh, medical superintendent of the Glasgow Western Infirmary, and Ex-Provost Thomson, director of the Stirling Royal Infirmary, are also members of the Western Regional Committee; Major-General Thomson is a director of the Aberdeen Royal Infirmary and a member of the North-Eastern Regional Committee; Mr. C. F. Henderson is a director of the Dundee Royal Infirmary and a member of the Eastern Regional Committee: and Provost MacEwen is chairman of the Northern Infirmary, Inverness. Lord Mackenzie was chairman of the Hospital Services (Scotland) Committee which reported in 1926.

Report of the Scottish Board of Health.

The tenth annual report of the Scottish Board of Health, dealing with the year 1928, has just been issued. This is the last year in which a report will be submitted by the Board of Health, whose functions have now been taken over by the Department of Health. The report therefore includes a reference to some of the important developments that have taken place during the ten years of the Board's existence. The Board was instituted in 1919 as a combination of the Local Government Board for Scotland, the National Health Insurance Commission, the Highlands and Islands Medical Service Board, and the medical sections transferred from several other departments. The most urgent problem that confronted the Board on its appointment was in relation to housing, building having to a great extent been held up during the war. A majority of local authorities, in co-operation with the State, which offered subsidies, initiated building schemes whereby over 100,000 houses were erected for the working classes. In addition, about 2,000 houses have been built each year by private enterprise. These new houses afford a standard of comfort far in advance of that attainable in the smaller, more crowded, and less sanitary buildings of the past. The clearance of slum areas was a cognate task for which a Treasury grant to cover loss has been available to local authorities since 1923. The number of houses dealt with in this way has exceeded 14,000. Dundee, in consequence of a gift of £130,000 by Mr. Robert Fleming for the purpose of purchasing sites and rebuilding houses condemned as insanitary, has enjoyed special facilities for slum clearance.

Public Health Services.

The health of mothers and children has received sustained attention in recent years. The maternity and child welfare service, started during the war, has made great progress, and still continues to develop and demonstrate its usefulness over the whole of Scotland. The care of children in health and in sickness is covered by this service until they have reached the age of 5, when they pass to the supervision of the school medical service. The usefulness of the measures undertaken, which include home visitation by health visitors, provision of ante-natal centres, child welfare centres, and skilled midwifery service with institutional treatment when required, has been proved by the continued fall in the infantile mortality rate and in the death rate of children under 5 years of age. In Scotland there are roughly 350,000 children between the ages of 1 and 5 years, and it has been a common observation of school medical officers that a large proportion of the disabilities found in school children are discovered in those just entering school. Medical inspection and treatment of school children were in operation before the war, but the present system has only developed since the year 1919. There are approximately 825,000 pupils in the State-aided schools of Scotland, and in practically all areas these children are inspected at least three times during their school life. The Board has welcomed the recent movement to take children from the congestion of the towns, and protect them from the dangers of the streets and roads, by establishing and extending playing fields, and further recommends the provision of more adequate recreation facilities for persons of all ages. It makes reference to an investigation into the nutrition of school children carried out in the past two years by funds provided by the Empire Marketing Board. The investigation showed that milk is an invaluable food for growing children, and that those who received an extra ration increased in weight and height with special rapidity. After leaving school the majority of children come under the national health insurance scheme, which in Scotland includes 1,751,200 persons. The amount of money spent annually on various benefits to insured persons was nearly £4,000,000. Surpluses, disclosed by valuations of societies made within the past ten years by the Government valuer, have been made available for additional benefits, the greater portion having been spent on ophthalmic and dental benefits. Arising out of the industrial position of the year 1926 and subsequently, the heavy claims on national health insurance funds have caused grave concern, and until results of the third valuation, at present in progress, are known it will not be possible to forecast how far additional benefits will continue to be available. Among recent developments in the insurance scheme has been the contributory pensions scheme, which came into operation in 1926 and 1928; 1,774,100 persons have been insured for the purposes of contributory pensions, and the total number of beneficiaries is now over 173,000. The Highlands and Islands medical service scheme had brought within the reach of all persons in isolated areas the services of medical practitioners at modified fees, and a special development of the last few years had been the establishment of a surgical service for Lewis and Harris, Orkney, and Shetland.

Problems of Hospital Accommodation.

The report points out, in regard to the treatment of disease, that there still exists a shortage of hospital beds for the country as a whole, estimated in 1925 to amount to 3,600 beds. A movement to secure co-operation in hospital services has developed strongly in the last few years. The voluntary hospitals have set up area committees in each of the five hospital regions of Scotland to survey the needs of the areas, and, at the request of the Secretary of State for Scotland, a voluntary hospitals liaison committee has been appointed to act between the area committees and the central department. In Aberdeen a scheme for co-ordinating the poor law and public health services has been carried through with great success, the way having thus been cleared for co-operation between the public authorities, the medical profession, the university, and the voluntary hospitals. In Glasgow, Stirling, and Falkirk, also, promising experiments in co-operation between public authorities and voluntary hospitals are being carried out.

Infectious Diseases.

Compulsory notification of infectious diseases has been in operation in Scotland for about thirty years, and in the same period a movement for the establishment of hospitals for infectious diseases has matured. During the past ten years there has been no decided diminution in the number of cases of scarlet fever, although the disease has become milder and the death rate has fallen. In the same period cases of diphtheria have, on the whole, increased, but with a marked reduction in the proportion of deaths. In both of these diseases 76 per cent. of cases have been treated in hospitals. Enteric fever has shown an extraordinary fall to one-tenth of the previous number of cases, and an even more striking reduction in the number of deaths. The death rate from pneumonia has shown no decrease in recent years, but local authorities have recently opened their hospitals to more than 5,000 cases each year. Measles and whooping-cough have shown a diminution in the death rate for the past ten years.

Developments in Health Legislation.

In 1920 the Blind Persons Act placed on local authorities the duty of making arrangements for promoting the welfare of blind persons, and generally approved schemes were provided for carrying out such services through voluntary agencies. As a result the number of untrained employable blind persons has been steadily reduced, and nearly all blind children are being educated. Old age pensions have become payable to blind persons at the age of 50. With regard to general sanitation, considerable developments have taken place in the last ten years. The majority of burghs and townships were provided with considerable water supplies and drainage systems in the thirty or forty years before the Board took up office, but a provision in the Local Government (Scotland) Bill enables county councils to contribute towards the cost of water and drainage in villages and other places where sufficient money cannot be raised by assessment. Within the past few years great public cleansing services have been reviewed in many cities, and well-understood rules are now in operation to prevent nuisance to those who live in the vicinity of refuse dumps. Great interest is being manifested by the public in matters relating to diet and food, and food shops are tending to grow more attractive and more cleanly. In 1923 a uniform standard of meat inspection was established by the Board, and in 1925 the Preservatives Regulations were framed to deal with the addition of chemical substances to foods. The Milk and Dairies (Scotland) Act, which came into operation in 1925, provides control over milk to ensure that it should be clean and wholesome, and every dairy cow in Scotland is now examined by a veterinary inspector at least once a year, in some burghs even every month.

The report refers especially to the services rendered by Sir Leslie Mackenzie, M.D., who has now retired, and mentions particularly the measures initiated by him for the treatment of tuberculosis, the medical inspection and treatment of school children, and the care and supervision of mothers and young children.

Church of Scotland Deaconess Hospital.

The annual meeting of the Church of Scotland Deaconess Hospital was held in Edinburgh on March 22nd. The annual report showed that the number of out-patients had increased greatly in recent years, and the board hoped to acquire during 1929 a site adjoining the hospital for the erection of a building to enable them to treat a much larger number of such patients than the 6,893 who had received treatment during 1928. The number of patients treated in the wards during 1928 was 640, and the income during the year amounted to £6,031, with an expenditure of £5,899, which left a surplus on the year's working of £231. The chairman said that all institutions of that kind had their ups and downs, but few institutions could record such a small number of downs as the Deaconess Hospital, of which the reports had been almost uniformly reports of progress.

Ireland.

Medical Matters in the Dail.

IN connexion with the discussions on the estimates for local government and public health, most of the medical members of the Dail made contributions. Sir James Craig, M.D. (Dublin University), said that there ought to be a Minister, or at least a Parliamentary Secretary of Public Health, who had had a medical training. He was not finding fault with the present Minister, but there was no doubt that the sanitary condition of the country was unsatisfactory—in parts of the small towns and villages the conditions were deplorable, and they could have no stronger proof of this than in the fact that in one area there were seventy cases of enteric fever. He had never suggested that good sanitation would prevent small-pox, but enteric fever and diphtheria, the two infectious fevers now prevalent, were eminently diseases brought about by bad sanitation and bad water supply. What, he asked, was the use of sending medical inspectors to inspect conditions for which they could do no good? They would make no progress in the sanitary conditions of the country until they had appointed county medical officers of health, who would alone be responsible for that class of work. He would like to know what progress had been made in the medical inspection and treatment of school children, which was absolutely necessary if they were to have a first-class adult population. He had spoken before about the insanitary condition of the schools, which was a disgrace to the country. It would have been a godsend if these schools instead of the country mansions had been blown up, because they would have been replaced by proper buildings. Dr. O'Dowd (Roscommon) drew the attention of the Minister to the outbreak of typhoid fever in Carrick-on-Shannon, county Leitrim. Dr. O'Dowd stated that the water supply for the town was drawn from the River Shannon near the same spot where the sewage of the town entered the river. It was true that the water was filtered, but analysis showed that it was polluted. He appealed to the Minister of Local Government and Public Health to see that such towns as Carrick-on-Shannon were provided with proper water and sewerage systems. He also urged that a scheme of compulsory inoculation against typhoid fever should be enforced immediately in any district from which a case came. Dr. T. Hennessy (Dublin City, South), replying to a deputy from Mayo who urged on the grounds of economy that the dispensary doctors should be made to do all public health work in the Free State, said that it would be impossible for the dispensary doctors to carry out the duties of whole-time medical officers of health. Apart from any special training and administrative experience, the dispensary doctor, who was a part-time medical officer, was mostly dependent on his private practice, and if he rigorously discharged the duties of a medical officer of health it would bring him into frequent conflict with perhaps some of his best clients. Dr. Hennessy readily admitted that the Minister and the Department of Public Health did an immense amount of work for the promotion of public health administration in the Free State, especially when the ill-advised opposition they met with from some of the local authorities was borne in mind.

He objected to the position given to the Irish language in making medical appointments in the Free State. Dr. Tubridy (Galway), Dr. Ward (Monaghan), and Dr. White (Waterford) also took part in the discussion.

Lectures at Trinity College, Dublin.

The Mary Louisa Prentice Montgomery Lecture in Ophthalmology will be given this year by Mr. Louis E. J. Werner, M.B., D.O.M.S., in the School of Physic of Dublin University, on Thursday, April 25th, at 5 o'clock. His subject will be "The slit-lamp in clinical practice." A short course of lectures on anaesthetics will be given this term for medical students in their final year by Dr. T. P. C. Kirkpatrick, the University lecturer in anaesthetics. This course is intended to supplement the theoretical and practical instruction which is given at the clinical hospital. Arrangements have been completed for the holding of the usual three weeks' post-graduate course from September 16th to October 5th. As in former years, practitioners attending the course will be able to live in college chambers as far as possible.

Health Schemes in County Louth.

The Free State Local Government Department has sanctioned provision being made for the ophthalmic treatment of school children in County Louth. Under this scheme the Board has appointed Dr. Connolly to attend children who are recommended by the school nurses as needing treatment of the eyes. Hospital treatment also will be afforded, and a scheme for dental benefit is being arranged. It is proposed that dentists should visit the towns of Ardee, Drogheda, and Dundalk under the scheme, and that the children of poor parents should be attended free. The further use of ultra-violet ray treatment for patients who have left hospital is also being dealt with; and, on the recommendation of Dr. Musgrave, the Board has decided that in cases where the patients require further treatment, and are unable to pay the cost of rail or bus to the Ardee Hospital, the matron of that institution should be empowered to advance the necessary money. A feature of this scheme is that the hospital proper will be left available for more urgent cases.

England and Wales.

Proposed Clinic for Rheumatic Diseases at Brighton.

A MEETING of the medical practitioners in Brighton and Hove was held on April 3rd to discuss the need of a local clinic for the treatment of rheumatic diseases. Dr. George Morgan (chairman of the Brighton Division of the British Medical Association) was in the chair. Dr. J. Stanley Ellis, who opened the discussion, emphasized the growing interest in rheumatic disease as a cause of industrial inefficiency, and pointed out that the present efforts to reduce the increasing sick benefit expenditure and the appalling waste of time due to rheumatic disability were wholly inadequate. Early treatment was essential, since 80 per cent. of cases could be cured or much improved if efficiently treated within the first six months. The best way to secure early treatment was by local rheumatic treatment centres founded on the lines laid down by the Ministry of Health. The "arthritis unit" work could be done at the existing hospitals, and some in-patient accommodation be also provided locally; the electro- and hydrotherapeutic treatments needed specially designed institutions. Dr. Ellis said there was every inducement to start such a centre at Brighton with its many facilities. At present at the local hospitals only about 15 per cent. of patients were cured or returned to full work, whereas by a special clinic at least 40 per cent. ought to be cured and a further 30 per cent. enabled to do their ordinary duties for nine months to a year before requiring further treatment. Dr. M. B. Ray, honorary secretary of the National Campaign against Rheumatic Diseases, explained that this society was a development of the British Committee on Rheumatism, which was a purely provisional committee instituted nearly four years ago by the International Society of Medical Hydrology. At the wish and with the assistance of the latter body, the "Campaign" had now been launched as an independent organization, and it was intended to include in its membership representatives of all the various friendly and other societies and associations, both of employers and employees, who were especially interested in seeking to diminish the toll of sickness levied by the prevalence of these most distressing maladies. The campaign having been designed to support and co-ordinate measures against rheumatic diseases, its ideals could best be realized by educating medical opinion as to the necessity for early diagnosis and systematic treatment and by teaching the public to demand increased provision for treatment and research. The kind of treatment afforded in a centre or clinic comprised: the employment of heat, cold, and movement, in water vapour and hot air—locally and generally applied; manipulation and exercises, alone or in combination with heat, by the hand, or by douches or whirling water; radiation—as from heat, light, and the invisible rays; electricity—as constant current to resolve exudations and promote nutrition, as interrupted current to cause movement of muscle fibre, and as high-frequency current (diathermy) to raise the temperature of deep-seated parts. The clinic or centre should be in close association with a fully equipped hospital department, where patients could be sent for complete investigation and diagnosis. In such a hospital department or "arthritis unit," if a focus of infection had been discovered it would be removed, if deemed advisable. The bacteriological and biochemical investigation of each case sent there by the clinic would be undertaken before the patient was returned for treatment. Any necessary orthopaedic surgery would be provided at the "arthritis unit." In the first instance, all patients who desired to avail themselves of the treatment facilities would present themselves at the clinic or centre, which acted as a clearing house, the patients being directed to the form and place of treatment best suited to their needs. Dr. Ray thought that the establishment of a "rheumatic clinic" on these lines in Brighton would be a most valuable addition to the resources at present in existence for the combating of rheumatic diseases; there were facilities for the employment of sea water for therapeutic purposes. Dr. Duncan Forbes (medical officer of health, Brighton) emphasized the "arthritis unit" as being of the first importance, since by careful study of each patient by a team of medical experts, septic foci could be discovered in 70 per cent. of all cases. He hoped that the "arthritis unit" would be established at the Royal Sussex County Hospital, where all the necessary equipment for team work was already provided. He advised the establishment by the municipalities of a physical treatment centre which would compare favourably with those already at work in the various spas. Brighton would enhance its reputation as a health resort. The discussion was continued by Drs. Greenyer and Copeman, Sir Hubert Bond, and Dr. Parry, and it was resolved, finally:

> That this meeting of members of the medical profession in Brighton and Hove is of the opinion that facilities for the formation of a rheumatic clinic in Brighton would not only be of direct benefit to the residents in the County Borough and surrounding area, but would also be found to attract desirable visitors to the town.

It was agreed to send a deputation, consisting of Drs. Morgan, Broadbent, Parry, Edmonds, and Ellis, to the Brighton Town Council.

An Outbreak of Imported Small-pox.

The Chief Medical Officer of the Ministry of Health (Sir George Newman) reports that the facts of this outbreak, so far as ascertainable on April 12th, are as follows:

"The Anchor Line s.s. *Tuscania* left Bombay on March 14th after a stay at Bombay of a week or more. It is stated that the crew and passengers numbered some 900 to 1,000. Some 200 of the passengers left the liner at Marseilles on March 27th and travelled direct to London or elsewhere; the majority, however, remained on board the ship bound for Liverpool. At Marseilles an able-bodied seaman was landed on March 27th and died that day in hospital from small-pox. His condition had not been diagnosed on the ship, but was ascertained only when he arrived in hospital at Marseilles.

As far as our information goes, he had been ill from March 17th, and on the following day it appears that another member of the crew fell ill, though he was not landed at Marseilles, nor was he diagnosed as suffering from small-pox. He was removed to hospital on arrival at Liverpool on April 1st, and three or four 'contact' persons with this second patient were also removed to hospital. It should be added that when the shipping authorities learned at Marseilles that they had to deal with small-pox infection on the *Tuscania* they obtained vaccine lymph at Marseilles, and the ship's doctor undertook the onerous task of vaccinating, or revaccinating, the passengers and crew. On arrival at Liverpool some 650 passengers disembarked, and information was sent by the Liverpool port authorities to the districts to which they were stated to be proceeding. Several passengers subsequently proceeded on the *Tuscania* to Glasgow, where the crew were also disembarked. The authorities at Liverpool also informed the local authorities of the destination (as far as known) of the 200 persons who left the ship at Marseilles and travelled overland.

"On receipt of the information thus provided, the central and local health departments in this country have proceeded in the ordinary way in regard to notification, isolation, disinfection, etc., and are keeping as far as possible the various 'contact' persons under supervision. It is, however, obvious that it is inevitable that if a number of persons, apparently healthy at the time of disembarkation, leave a ship that has been infected with such a disease as small-pox, it is probable that there will be a number of secondary cases of infection, provided that such persons had not been adequately vaccinated before their contact with the infection. There is, however, no cause whatever for alarm in regard to this unfortunate incident. The average number of cases of small-pox of mild degree notified in England and Wales per week during the last three months has been about 250. To this prevalence of mild small-pox must now be added a certain number of cases of small-pox of severe degree. Up to the present some 35 cases of this imported infection have been notified in London and elsewhere, among which persons there have been up to date five deaths.

"The means of the prevention of small-pox, whether of mild or severe degree, is the same—namely, vaccination. There can, of course, be no assurance as yet that the 'contact' persons who were on board the *Tuscania* during its period of small-pox infection will escape the disease, for they may have become infected before being vaccinated on the ship. They may or may not escape. But if they had been previously vaccinated (or indeed were vaccinated on the ship) the probability is greatly in favour either of their entire escape from this malady or of their attack being less severe than if they had not been vaccinated at all. In any case, it must be added that an unvaccinated community is an unprotected community, as an unvaccinated person is an unprotected person."

Post-graduate Instruction in the University of Leeds.

A comprehensive series of post-graduate courses during May, June, and July has been arranged by the Faculty of Medicine of the University of Leeds. Commencing on May 1st, three series, each of six lectures, will be given on Wednesday afternoons. Dr. H. W. Davies will deal with acidosis, alkalosis, and ketosis, at the School of Medicine; Mr. A. Richardson will discuss emergency surgery, in the General Infirmary; and Professor W. H. Maxwell Telling will lecture on diseases of the ductless glands, also in the General Infirmary. The minimum number for each class is ten. An intensive general course of clinical instruction and lectures will begin on Monday, July 1st, at the General Infirmary and the School of Medicine, and will occupy the whole day. Professors Jamieson, McSwiney, McLeod, and Maxwell Telling will be in charge of their respective subjects, and other lecturers and demonstrators include Mr. Dobson, Dr. Veale, Mr. Oldfield, Dr. Cooper, Dr. Polson, and Dr. Anderson, who will deal with fevers. The fee for this course is five guineas, and the maximum number that can be accepted is twenty-four, so that early application is necessary to ensure participation. Further information can be obtained from the Dean of the Faculty of Medicine, the School of Medicine, Thoresby Place, Leeds.

Queen's Hospital, Birmingham.

The eighty-eighth yearly meeting of the Governors of the Queen's Hospital, Birmingham, was held on April 9th, when the annual report and statement of accounts were adopted. Sir Charles Hyde, president of the hospital, commented on the good progress made by the contributory scheme, and hoped that it would give valuable assistance in meeting a total deficiency in the hospital accounts of nearly £17,000. No fewer than ten beds had been endowed already by the efforts of students of the university. He called attention to the fact that there had been a considerable increase in the number of casualties treated last year. Mr. T. Oliver Lee, the honorary treasurer, announced that the extensions of the hospital had now been in use for two or three months, and that, consequently, in 1929 and subsequent years, there would be an increase in expenditure of between £12,000 and £14,000. Mr. A. W. Nuthall, F.R.C.S., spoke of the need for obtaining adequate supplies of radium for Birmingham as a whole. Dr. Purslow, chairman of the house committee, outlined the position of the Queen's Hospital under the contributory scheme and its associated organization, the Birmingham Hospital Saturday Fund. He said that the Queen's Hospital had abandoned the ticket system in 1875, and might claim, therefore, to be one of the pioneers in this respect. The hospital had, consequently, suffered through lack of subscriptions in comparison with hospitals that used tickets, and the contributory scheme had to meet this strain. He approved the scheme, however, and hoped that when the present difficulties were surmounted a financial grant might be obtainable which would be proportionate to the work carried on.

Correspondence.

THE LEUCOCYTES IN PERNICIOUS ANAEMIA.

SIR,—Dr. G. W. T. H. FLEMING, in his interesting paper published in your issue of April 6th, pleads for a closer study of the leucocyte in all patients suffering from pernicious anaemia. He refers more particularly to the deviation from the normal in the "polynuclear count," a change characterized by a shift to the right. This remarkable and significant variation in the blood is an essential characteristic of Addison's anaemia, and is one means of differentiating this disease from all other forms of anaemia, with the exception of sprue, and possibly that found in those infected with the *Dibothriocephalus latus*, and in lymphatic leukaemia.

The importance of such a finding is worthy of emphasis, since, up to the present, one fails to find any reference to it in the textbooks of medicine. Dr. Fleming gives the credit for the recognition of this characteristic change in the polynuclear count to Naegeli, 1919, and Arneth, 1920, and in so doing he has inadvertently overlooked the fact that this right-handed drift was first described by Dr. W. E. Cooke, in *The Arneth Count*, pages 18 and 19, published in 1914. It was there pointed out that, not only was this finding of diagnostic value, but that it necessitated a reconsideration of the fundamental etiology of this fascinating disease.—I am, etc.,

Liverpool, April 15th. JOHN HAY.

SIR,—Dr. G. W. T. H. Fleming (April 6th, p. 638) has indeed done a most useful work in calling attention to the changes in the nuclear picture of the neutrophiles during the development of a remission of the disease. He seems to me, however, to have slighted the haemogram of Schilling more than is really justifiable. Schilling does not include all neutrophiles with single, undivided nuclei in one class (myelocytes and metamyelocytes), but differentiates them as myelocytes, young metamyelocytes, and metamyelocytes with band-like nuclei. Normally some 4 per cent. of the leucocytes are "band forms," whereas neither myelocytes nor young forms are found in health.

Dr. Fleming says that "the Schilling haemogram does not indicate any abnormality in pernicious anaemia apart from an inconstant lymphocytosis." My own findings do not quite bear out this statement; I have always found the percentage of band forms reduced, while a few young forms and even myelocytes are present. Surely the inclusion of all neutrophiles with unlobed nuclei in Class I of the polynuclear count must fail to give a clear insight into such a leftward shift as that shown by the haemogram.

It is, of course, essential that both the polynuclear count and the Schilling haemogram should be investigated in every case, but I can see no reason to suppose that either can justifiably be regarded as the more important.

May I also confirm Arneth's statement that there is a shift to the right in lymphatic leukaemia, although I do not know whether this is invariably so? At the same time there is almost always a general immaturity in Class I of the polynuclear count. Similarly, in some, perhaps all, cases of Hodgkin's disease there is a shift both to the left and to the right, although this usually becomes less noticeable after *x*-ray treatment.—I am, etc.,

Maldon, Essex, April 6th. A. PINEY.

DEEP *X* RAYS AND THE CELLS OF THE BLOOD.

SIR,—Drs. Knott and Watt raise many important issues in their interesting preliminary note of their work on opsonic indices in radiated patients (March 23rd, p. 542). Much clinical work, however, showing the benefit of radiation in many acute and chronic septic conditions—work often confirmed fully by bactericidal blood tests—has shown that only in a very restricted sense is their statement to be accepted that "actively septic patients, leukaemic or otherwise, are not usually favourable subjects for irradiation."

Dr. Cave has pointed out (April 6th, p. 664) that, particularly in some acute skin infections, many good results have been obtained. But many other deeper acute and chronic infections have been successfully treated by radiotherapy. The report of Heidenhain and Fried (*Langenbeck's Arch. f. Chir.*, 1924, pp. 624–665) shows about a 75 per cent. rapid and excellent result in a series of 243 cases of such conditions as acute inflammatory glands of the neck and groin, acute mastitis, cellulitis of various regions, post-operative pneumonia, and parametritis; and these clinical results were confirmed by a series of bactericidal blood tests, which showed the beneficial effect of *x* rays on the patient as evidenced by the inhibited growth of stock and, more particularly, autogenous cultures.

Such bactericidal tests may be better than opsonic estimations for estimating the effect of radiation on septic conditions. But, apart from this point, the work of Heidenhain and Fried has shown clearly that radiation, to be successful in acute septic conditions, must not only be very closely watched twice daily in its effect, but must be very carefully applied *in doses about 20 per cent. of the mild skin dose*. Larger doses will not lead to the desired effect, and may even be dangerous.

The experience of many can confirm these results. It is not primarily a matter of the *quality* of the radiation used, as Dr. Cave suggests, but of the *quantity* absorbed, in comparison with some standard such as the skin dose, that is of importance to the result. For example, Berven, in his just published report on the "Treatment of tumours at Radiumhemmet" (*Acta Radiol.*, 1929, vol. x, p. 1), says that in ulcerated tumours "we have had great use of a resorbent Roentgen ray treatment prior to the radium treatment." A sixth to an eighth of a skin dose (high voltage) makes a great improvement in some days in the condition of cases of very septic cancer of the lip, and the subsequent radium treatment is facilitated.

I have had similar results in septic cancer cases; also with many non-malignant infections. If small but adequate doses are used, Dr. Knott and Dr. Watt's statement will be found to be far from a complete summary of the recently opened-up subject of the effect of radiation in acute and chronic infections.—I am, etc.,

London, W.1, April 12th. J. H. DOUGLAS WEBSTER.

DOSAGE OF THALLIUM ACETATE.

SIR,—Thallium acetate has been in use in the schools of the Brighton guardians for about eighteen months. The calculation for determining the right dose was rather complicated, involving the conversion of weights from the English system into the metric system and back again. On one occasion an overdose, fortunately not severe, occurred as the result of a mistake in the calculation. I then tried to find a simpler calculation. I found that *the weight of the child in pounds divided by 18 equals the dose of thallium in grains*. As an additional safeguard the weight of the child is put on the top of the prescription so that the dispenser can check the calculation. In view of the recent unfortunate disaster in London I thought perhaps that this simpler calculation might be useful to others, who may be alarmed at the risk of a mistake in estimating the dose.—I am, etc.,

Hove, Sussex, April 10th. H. J. MCCURRICH.

SIR,—There have been so many mistakes and discrepancies in the press reports on the inquest on the three boys who died from an overdose of thallium acetate that I would like to state the plain facts of the case. The strength of the solution should have been 7.8 mg. per fluid drachm, and was based on a prescription handed to the hospital dispenser about two years ago. The prescription was written in the hospital pharmacopoeia, and it has always been understood that the solution sent up from the dispensary would be that strength. Acting on this assumption, the correct volume of the medicine was measured out so that each child should receive a dose of 8.5 mg. per kilo of body weight. Unfortunately, the solution was not correct; a decimal point had been misplaced and each child received ten times too much—instead of 8.5 mg., 85 mg. per kilo were actually given.

A further point which was not made clear was that on analysis the solution from the small bottle "B" was only 5.6 times, and not 10 times, too strong. This is accounted for by the fact that after the children had received their medicine from the larger bottle "A," only about one ounce of the solution was left in the bottle, and on being returned to the dispensary it was emptied out into the smaller bottle "B," which already contained about one ounce of the solution left over from a previous occasion, and which was, of course, the correct strength.

One further remark I would like to make. In one paper I was reported to have admitted that one of the patients to whom I had administered the same medicine had afterwards gone off into a "trance." What I really said was that in all the series of cases we had treated only one reported having slight transient pains, and these did not occur until a week had elapsed after taking the medicine.—I am, etc.,

J. M. SPENCER SCOVELL, M.D., Ch.B.Ed.

London, W.1, April 15th.

THERAPEUTIC VALUE OF ULTRA-VIOLET LIGHT.

SIR,—In the introduction to the recently issued annual report of the Medical Research Council certain general comments with regard to light treatment are made. As these remarks are only in the general introduction it would be helpful to have an authoritative answer to the following question: Had the comments on light treatment been submitted for approval to the Medical Research Council's Committee on the Biological Actions of Light? If the answer is in the negative further observations are unnecessary.—I am, etc.,

London, W.1, April 12th. C. B. HEALD.

ESTIMATION OF HEPATIC EFFICIENCY.

SIR,—I hope you will kindly allow me to comment on the letter on the above subject in your issue of March 30th (p. 621), which referred to my report on Roch's test, recently published.

1. Your correspondent does not state how the results he quotes were interpreted as an answer to the question set.
2. No experiments seem to have been made on healthy subjects as controls for the results obtained with patients.
3. My experience with Roch's test on myself and other three healthy subjects gave positive results, and as similar results were obtained with patients having unhealthy livers this was regarded as proof that the elimination of salicylic acid in the urine is a normal result after its ingestion, whether the liver was diseased or healthy.
4. Your correspondent's positive results cannot therefore be accepted as proof that the liver's antitoxic function was disturbed in any single case, nor can much be inferred from the negative results, except that probably they arose from incomplete extraction of the salicylic acid, as was proved in my experiments.

These results need not be more fully analysed, but as a whole I consider they confirm the conclusion reached in my article—namely, that Roch's test is of no value in diagnosing disease of the liver.—I am, etc.,

London, E.1, April 12th. W. RALSTON.

THE CIRCULATION UNDER THE SPHYGMOMANOMETER CUFF.

SIR,—Dr. Harrington Sainsbury can be assured that the method used by me on the frog is the same in principle as that of the sphygmomanometer, and Mr. N. Pines confirms, as stated in his letter, for the eye viewed by the ophthalmoscope exactly what I see under the microscope in the case of the tongue or web of the frog. Dr. Sainsbury, I think, leaves out of account the difference of pressure in systole and diastole. As the compression is increased the flow becomes slower and pulsatile; next the flow only occurs during systole and ceases during diastole of the heart; finally the flow in the vessels stops and the blood is squeezed out, the direction of flow being reversed in the artery. Before the final cessation of the flow in systole the artery shuts up in diastole and opens at the height of systole enough to let a few corpuscles through.

When the pressure in the cuff of the sphygmomanometer is maintained, say, at 40 mm. of mercury, and rises to that pressure in the big veins below the cuff, it must be borne in mind that this pressure only pertains in the wider connexions between the arteries and veins. Owing to the increased resistance to flow as the pressure in the cuff rises, the circulation stops in capillaries where the frictional resistance is greater; the pressure is then not fully transmitted to these. If the middle portion of the frog's tongue be compressed by my apparatus the conditions are exactly equivalent to those pertaining when the cuff is applied to the arm.—I am, etc.,

LEONARD HILL.

National Institute for Medical Research, Hampstead, N.W., April 9th.

THE ART OF SURGERY.

SIR,—The criticism of Mr. Souttar's claim for surgery as being essentially an art on the ground that it is not necessarily associated with any moral, spiritual, and, I might add, emotional experience, is, I think, right. The true aim of art is the expression of beauty in its physical, moral, spiritual, and emotional aspects. It may be difficult to define beauty, but its effects upon those who come within its reach are none the less genuinely felt. Mr. Souttar himself experienced them when engaged in contemplating the Venus of Milo. No one, however enthusiastic a surgeon he may be, is justified in claiming that witnessing an operation, in all its stages, however dexterously and beautifully performed, is capable of awakening in the spectator, or in the operator himself, feelings even remotely comparable with those produced by literature, music, painting, sculpture, and architecture. Surgery, moreover, is hardly a constructive activity, and as such it cannot be called an art in the sense in which those human achievements I have mentioned are arts. Plastic and orthopaedic surgery, for instance, which are practically the only constructive portions of a surgeon's work, however much they may and do serve a useful purpose, cannot by any stretch of imagination be called beautiful in their results, except in so far as those results appeal to our perverted sense of true beauty in its application to surgical practice. No one denies that art forms part of surgery, but its scope is limited; all great art is essentially creative, which surgery is not, and never can be. It is not through any fault of Mr. Souttar's that his achievements, high as they are, cannot come up to the level reached by workers in other realms of art. The reason lies solely in the limited artistic values of the materials at his disposal, whereby the fullest expression of his obviously very artistic nature is unavoidably and irretrievably curtailed.—I am, etc.,

D. W. STANDLEY.

Greenhithe, April 7th.

THE TREATMENT OF ACUTE OTITIS AT PUBLIC SCHOOLS.

SIR,—There is a circumstantial story going the round just now, which I will repeat for whatever it may be worth, because it points the moral of something I have to say later. It is said that an otologist was recently summoned to a public school and found there four boys with five acute suppurating mastoid antra between them; he operated at once upon all four. All the patients had had acute otitis media; on none of them had a paracentesis tympani been performed.

Now what I can vouch for. Last term my eldest son developed scarlet fever at his public school. (Incidentally his mother found out he was ill at a half-term visit, when he had already had symptoms for thirty-six hours—naturally, an epidemic followed). The next day I visited him and learnt that he had left-sided earache. I saw the school doctor and urged the importance of paracentesis. He agreed enthusiastically and promised to have it done if the drum should bulge. I went down a week later, and discovered for the first time that the drum had been allowed to rupture two days after my first visit. I offered no reproaches: I wish now that I had made myself unpleasant, for, soon after, a right otitis developed, and that, too, was allowed to take its own time in rupturing through the drum. An acute mastoiditis supervened necessitating a midnight operation and, of course, a prolonged convalescence.

I am moved to ask two special branches of the profession certain questions. I ask the otologists, Is early paracentesis the proper treatment for acute suppurating otitis media? Does it lead to speedier recovery, less chance of deafness, greatly diminished liability to acute mastoiditis? If the answers are affirmative, I ask the Medical Officers of Schools Association what they have to say on these topics, which seem to me to be of some importance to them.

I have been in private practice for twenty-two years, and have never yet met with an acute mastoid case; largely luck, no doubt, but partly, I think, because I believe in the surgical drainage of abscesses behind the tympanum. As I am only concerned to protect boys and girls in the future, I take leave to sign myself only by my degree of—

M.D.

April 15th.

THE ORGANIZATION OF A MATERNITY SERVICE.

SIR,—With reference to Dr. Farquhar Murray's interesting article in the *Journal* for April 13th (p. 691), I would like to mention that the Bristol Health Committee has instituted a scheme whereby any medical practitioner in Bristol can secure the services of a member of a panel of obstetric specialists whom he may wish to call in to a case of difficult labour. The Health Committee undertakes to be responsible for payment if the patient cannot afford the necessary fee. This scheme, which has only been in working for a few months, has shown results which promise to be of great value. May I state that I am in full agreement with Dr. Farquhar Murray's views in regard to handywomen.—I am, etc.,

R. A. ASKINS, M.D.,
Medical Officer of Health.

Bristol, April 16th.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

WHEN the House of Commons reassembled, on April 15th, after the Easter recess, Mr. CHURCHILL introduced the Budget for 1929-30. He drew attention to a decrease in the excise duties on beer and the customs duties on wine, and asserted that these resulted from a change in the national habits, which was an embarrassment to the Exchequer, but not a misfortune to the nation. The returns from the spirit duties had only been kept up by the exceptionally cold weather in the early part of this year. He proposed the total and final abolition of the tea duty from April 22nd, including the duty on tea grown outside the Empire. He proposed no remission of the duties on cocoa and coffee in this Budget, and no changes in the taxes on sugar and petrol, nor in the income tax, supertax, and death duties. Slight adjustments were proposed in the licence duties on brewers, distillers, and tobacco manufacturers, but no increase is to be charged in the present duties where the output of spirits on which the duty is calculated is for methylation or use in arts or manufacture. It is proposed to allow certain holders of off-licences to sell spirits by the half-bottle. Reductions are proposed in the licences for some classes of motor-propelled goods vehicles, and some motor cycles, but not on passenger motor cars.

Mr. CHURCHILL announced, on March 16th, that the present Parliament would in any event end before Whitsuntide. The

general anticipation is that a prorogation about May 8th will be immediately followed by a dissolution and by the general election campaign.

Lord Moynihan took his seat in the House of Lords on April 17th. He was introduced by Lord Dawson of Penn and Lord Illingworth.

Radium.

Dr. VERNON DAVIES, on April 16th, asked the Prime Minister what action the Government proposed to take on the report of the subcommittee of the Committee of Civil Research on Radium.

Mr. Churchill's Statement.

Mr. CHURCHILL, who replied, said: In view of the importance of the matter and the public interest attracted by it, the Government arranged for the immediate publication of the report. It will be seen that the report deals with the national requirements for radium in medical treatment, in the Fighting Services, and for the purposes of physical research, and with the possibilities of developing new sources of supply. Further, in a full statement as to the use of radium in medical treatment, the subcommittee has indicated that a great volume of avoidable distress and suffering persists simply because the radium required for the treatment of cancer is not available; and that the acquisition of further supplies should encourage the wider development of the highest skill in its use and the allocation of more hospital beds to the treatment of suitable cases. The subcommittee expresses the opinion that in order to meet the requirements of England and Wales, and of Scotland, 20 grams of radium, in addition to the stocks already available or likely to be available shortly, for general medical use, should be acquired within a specified period—namely, before the end of 1930.

The subcommittee recommends that the necessary sum, estimated at £200,000, should be raised by a public appeal, to which the Government should contribute pound for pound within that maximum sum. The subcommittee also proposes the setting up of an organization consisting, first, of a body to hold the funds and purchase and hold the radium, and, secondly, of a body to distribute the radium and secure its full use in the manner best adapted to further the advancement of knowledge and the treatment of the sick. As regards the recommendations of the subcommittee on the subject of the organization, these have been accepted in principle by the Government, but the precise form of the organization will remain open to further discussion. The Government has accepted the financial recommendation of the subcommittee, and will be prepared to contribute from public funds, up to a maximum of £100,000, to the extent of £1 for every £1 of private subscription for the purchase of additional radium. The Government confidently expects that there will be no difficulty in raising, in a very short space of time, the funds necessary to provide this invaluable addition to the national resources for dealing with one of the most formidable maladies known to us.

Mr. RAMSAY MACDONALD asked if the Government had considered the effect of this announcement on the price of radium, and if it proposed to take any steps to safeguard itself in that matter. Mr. CHURCHILL: I understand that all that is dealt with in the committee's report. The House is entitled to the report, and therefore publicity is unavoidable, but I do not apprehend any serious evil consequences.

Commander BELLAIRS asked if the report dealt with the international aspects of radium, and if it made any recommendation to bring the matter before the League of Nations, especially with regard to the Belgian monopoly. Mr. CHURCHILL said that he must confess that, like Commander Bellairs, he was looking forward to studying the report.

Lieut.-Commander KENWORTHY asked if the right hon. gentleman was aware that every time the Government had gone into the market to purchase radium the price had been raised against it, and if he would consider the suggestion of Commander Bellairs and advise the Foreign Office to examine into the matter of international action. Mr. CHURCHILL said that he understood, though he did not speak with first-hand knowledge, that this matter was fully discussed in the report. Replying to Dr. VERNON DAVIES, who asked if there would be an opportunity to discuss the report, Mr. CHURCHILL said that it did not seem to him that the House was going to have much opportunity for further discussion.

Sir R. THOMAS asked if the report dealt with the potential supply of radium in Australia. Mr. CHURCHILL: That is covered by the statement that I have not yet been able to study the report. Mr. R. MORRISON asked if it would not be necessary for the Government to have a supplementary estimate. Mr. CHURCHILL replied that whatever was right and necessary would certainly be done. Mr. W. THORNE asked what was the approximate cost of an ounce of radium. Mr. CHURCHILL replied that he was sorry that he did not happen to have that information. Mr. THORNE: Is the right hon. gentleman aware that the cost is about £400,000 per ounce?

On April 15th Dr. VERNON DAVIES asked a question on the same subject. Sir KINGSLEY WOOD said that the report of the subcommittee of the Committee of Civil Research would be published. The question whether the report should be brought before the League of Nations would be considered.

Small-pox.

Dr. FREMANTLE asked, on April 15th, the number of passengers landed from the s.s. *Tuscania* which recently arrived at Liverpool from Bombay; whether passengers and crew were under observation; what number of cases of small-pox had occurred among them; the number and vaccination history of the cases that had died; and whether any cases of small-pox had been notified from contacts with passengers and crew. In reply, Sir KINGSLEY WOOD referred Dr. Fremantle to the statement on the case which had been issued by the Ministry of Health and is published at page 742 this week. At present the Minister of Health was not in a position to make any further statement.

Mr. T. JOHNSTON asked the Secretary for Scotland whether he was aware that a member of the crew of the *Tuscania* was discharged at Marseilles; whether subsequently a wireless message was received from Marseilles intimating that the man had died of small-pox; whether on arrival at Liverpool the other members of the crew were taken to hospital for small-pox; whether on arrival at Glasgow, and before fumigation or disinfection of the ship, an engineer, along with twenty-three cases of chickens and seven barrels of ducks, was transferred to the s.s. *Caledonia*, which sailed for New York on April 7th; whether the Transport Workers' Union informed the ports' medical authorities of the transfer of the engineer and the foodstuffs from the infected ship prior to the sailing of the *Caledonia*; why nothing was done to prohibit this proceeding; if forty bags of flour had since been transferred from the infected vessel to the s.s. *California*, and whether the Secretary of State could assure the House that all proper steps were being taken to prevent a spread of the infection. Sir J. GILMOUR, in reply, said that he had been unable to obtain information on the detailed matters referred to. He was making inquiries and would communicate the result to Mr. Johnston after these had been completed. He was satisfied that all reasonable steps were being taken by the competent authorities in Scotland to deal with the position and to protect the interests of the public.

Universities and Colleges.

UNIVERSITY OF LONDON.

UNIVERSITY COLLEGE.

THE annual dinner of the Fellows of University College, London, will be held at the College on Tuesday, April 30th, at 7.15 for 7.30 p.m., in commemoration of the laying of the first stone of the College buildings by H.R.H. the Duke of Sussex on April 30th, 1827. Professor F. W. Oliver, M.A., D.Sc., F.R.S., elected a Fellow in 1886, will preside.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY Council meeting was held on April 11th, when the President, Lord Moynihan, was in the chair.

The secretary reported the death of Sir Anthony Alfred Bowlby, Bt., past President and past Member of the Council. The following vote of condolence was passed:

> The Council hereby express their deep regret at the death of Sir Anthony Bowlby, and their very sincere sympathy with Lady Bowlby and the members of her family in their bereavement. The Council also desire to express their grateful sense of the many services rendered to the College by Sir Anthony Bowlby during the twenty-four years he served as a Member of the Council, and especially to record their appreciative recognition of the distinction and ability with which he fulfilled the duties of President during his three years of office. The Council feel that the College has lost one of its most illustrious Fellows, who will long be remembered for his eminence as a teacher of clinical surgery, his conspicuous services during the South African and Great Wars, and for the zeal and ability which he brought to bear in the discharge of many duties undertaken by him on behalf of the State and the medical profession.

The honorary Gold Medal of the College was awarded to Sir George Makins, G.C.M.G., C.B., LL.D., in recognition of his valuable services to the College, more especially in arranging and describing the series of drawings in the Army Medical War Collection.

Sir D'Arcy Power was appointed honorary Librarian of the College in recognition of his services in re-editing Plarr's *Lives of the Fellows* and of his distinguished position as a bibliographer.

The Jacksonian Prize for 1928 was not awarded. The subject for the Jacksonian Prize for the year 1930 is "The pathology of ovarian cysts and its bearing on their treatment."

The vacancy in the Court of Examiners occasioned by the expiration of Sir Cuthbert Wallace's term of office on May 8th next will be filled up at the next meeting of the Council.

The following Members of twenty years' standing were elected to the Fellowship: Comyns Berkeley, M.D., M.Chir., obstetric and gynaecological surgeon to the Middlesex Hospital; William Blair Bell, M.D., B.S., obstetric and gynaecological surgeon to Liverpool Royal Infirmary.

On the recommendation of the Museum Committee it was decided to devote Lord Beaverbrook's grant of £1,000 to tissue culture research.

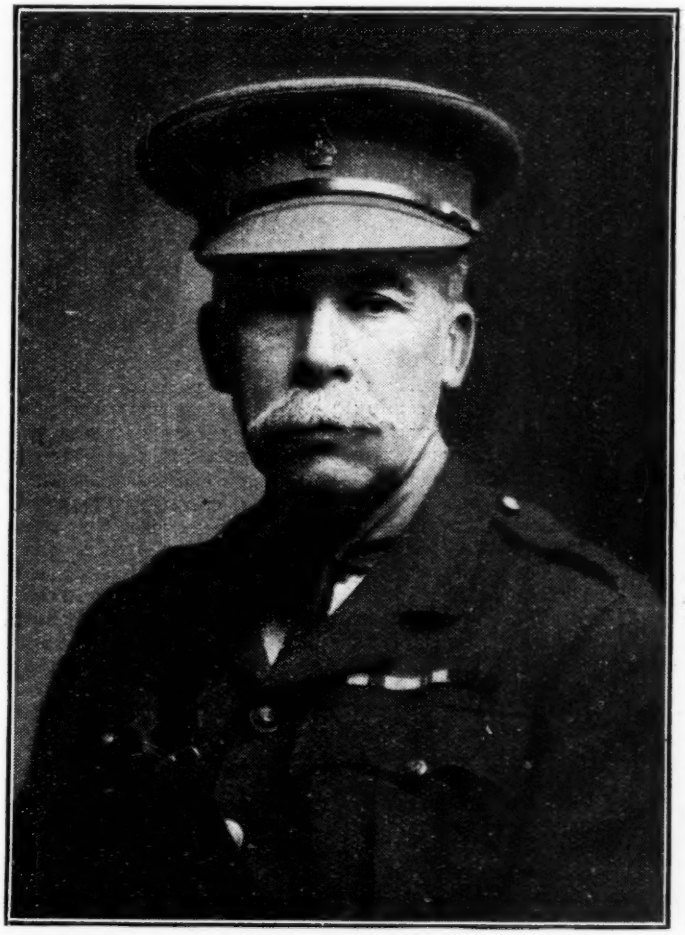
Obituary.

SIR ANTHONY ALFRED BOWLBY, BT., K.C.B., K.C.M.G., K.C.V.O.,

Honorary Surgeon to the King; Past-President of the Royal College of Surgeons of England; Consulting Surgeon to St. Bartholomew's Hospital.

As briefly announced in our last issue, Sir Anthony Bowlby, the eminent surgeon, died on April 7th at Stoney Cross, in the New Forest, at the age of 73, after a short illness.

Anthony Alfred Bowlby, third son of Thomas William Bowlby, was born on May 10th, 1855. His father first practised as a solicitor in London, and later was special correspondent of the *Times* at Berlin and in China, where he died in 1860 as the result of ill treatment from the Chinese, who took him prisoner after the capture of Tientsin. From Durham School Anthony Bowlby went to study medicine at St. Bartholomew's Hospital, and distinguished himself both at work and at games. He became M.R.C.S. and L.S.A. in 1879, and after winning the Brackenbury scholarship in surgery and serving as house-surgeon to Sir Thomas Smith, was admitted F.R.C.S. in 1881. His next appointment at St. Bartholomew's was that of curator of the museum, where he spent laborious days in completing the catalogue of pathological and anatomical specimens begun many years before by Sir James Paget. This early work in the museum and the post-mortem room laid the foundations for Bowlby's *Surgical Pathology and Morbid Anatomy*, a textbook highly popular with students, which first appeared in 1887 and reached its seventh edition in 1920, with Sir Frederick Andrewes as joint author. In 1882 Bowlby was awarded the Jacksonian prize of the Royal College of Surgeons for his dissertation on "Wounds and other injuries of nerves, their symptoms, pathology, and treatment"; in 1886 he won the Astley Cooper triennial prize for his essay on "The surgical treatment of diseases and injuries of nerves"; and in the following year he was Hunterian Professor. In 1891, after serving for seven years as surgical registrar, he was elected assistant surgeon to St. Bartholomew's, and became full surgeon in 1903. Bowlby was an excellent teacher with a clear crisp direct style, and his clinical lectures on surgery, no less than his informal talks to dressers in the wards, were valued by generations of students. On his retirement from the post of senior surgeon and his election to the consulting staff in 1920, he was presented by his colleagues and pupils with a portrait of himself in recognition of his services to the hospital and medical school and of the appreciation felt by all Bart's men for his distinguished work for military surgery. He was also for many years surgeon to the Alexandra Hospital for Hip Disease in Queen Square, Bloomsbury, and to the Foundling Hospital.



SIR ANTHONY BOWLBY, BT.

Soon after the beginning of the South African war Bowlby went out with the Portland Hospital as senior surgeon in charge, and threw himself with characteristic zeal and vigour into the administrative and surgical work of that war hospital, which was first established at Rondebosch near Capetown, and later moved up to Bloemfontein. For these services he was awarded the C.M.G. Some of his South African experiences were printed in these columns, and he gave a fuller account of them in a book entitled *A Civilian War Hospital*. After holding for some years the post of surgeon to King Edward's Household, he was appointed Surgeon in Ordinary to King George on his accession to the throne, and received the honour of knighthood in 1911. When the British Red Cross Society was founded in 1905 Bowlby was one of the three surgeons chosen by Queen Alexandra to act on the council; thenceforward until his death he was a greatly valued member of its executive committee, his knowledge of military surgery and administration enabling him to forward the society's work in many directions.

The outbreak of war in August, 1914, gave him further and wider opportunities for serving his country. He was soon at G.H.Q. in France, and was made advisory consulting surgeon to the B.E.F., with the temporary rank of major-general A.M.S. No plan formed in the early days of the war was more fruitful of good than that which led to the appointment of distinguished members of the staffs of civilian hospitals to be consulting physicians and surgeons with the armies oversea, and later for each military command in the United Kingdom. Passing constantly to and fro among the medical units they carried the experiences of one to the other, so that they were able to advise the chief administrative medical officers as to the means that should be taken to prevent disease or anticipate infection, and to afford opportunities for efficient treatment at the earliest possible moment. Experiences were collected and compared, meetings of the medical officers of an army were held for discussion, and the consultants of all the armies met together, until finally opinion on some problem or set of problems could be crystallized into a memorandum which was issued from G.H.Q. for information and guidance to the medical officers of each army. In all this Sir Anthony Bowlby took a leading part, his personality and habit of mind suiting him exactly for the work that had to be done. He was a familiar and welcome figure at every casualty clearing station, and often visited the field ambulances. In the words of a Territorial medical officer, "There was no more truly respected man than he at the Front. His excellent advice was always at our service, he never failed to be encouraging, and though his position in the medical service was so senior he often constituted himself a humble assistant of the junior." He was five times mentioned in dispatches, created K.C.M.G. in 1915, K.C.V.O. in 1916, C.B. in 1918, and K.C.B. in 1919. The Government of the United States awarded him the American Distinguished Service Medal.

In 1915 Sir Anthony Bowlby gave the Bradshaw Lecture before the Royal College of Surgeons, on "Wounds in war,"

and in 1919 the Hunterian Oration, on "British military surgery in the time of Hunter and in the great war." In the following year he was elected President of the College in succession to Sir George Makins, his colleague in France throughout the war, and held office until 1923, when he was created a baronet. Among the other civilian distinctions that fell to his lot were the honorary fellowship of the American College of Surgeons, and the honorary degree of D.C.L. of the University of Durham. He was for very many years a member of the British Medical Association, and often showed his friendship for the Association and its *Journal*. At the Annual Meeting in 1891 at Bournemouth he was secretary of the Section of Surgery, and at the London Meeting in 1895 he was vice-president of the Section of Pathology and Bacteriology. In the arrangements for the special clinical and scientific meeting held by the Association in London after the armistice he took an active part, and presided over the discussion on wound shock. He was for some time a member of the Metropolitan Counties Branch Council, and in 1922–23 was a valued member of the Arrangements Committee at headquarters.

The funeral service, on April 10th, was held very appropriately in the Church of St. Bartholomew-the-Great, West Smithfield, and the large congregation included leading representatives of the public institutions and bodies with which he had been associated, and many former colleagues and pupils.

We are indebted to Sir WILMOT HERRINGHAM for the following appreciation:

Bowlby and I were of almost exactly the same age—he was about three weeks the younger—but he was my senior at St. Bartholomew's, since I had gone to Oxford before coming up to town. We rose, therefore, through the various grades more or less together. When I was demonstrator he was surgical registrar, and when I was medical registrar he was already assistant surgeon. About 1895 I became assistant physician (the "physician in reversion" of Harvey's time), and I then joined him as joint treasurer of the school, and began to take an active part in school politics. The school was in low water at that time, and the yearly income was very much lower than it had been ten or twenty years before. But a younger generation was coming on, and we made it our policy first to improve the teaching in every possible way, and secondly, to make the junior appointments better than they had been, even though this should involve some loss to ourselves as seniors. Bowlby himself had long pursued the same aims, and had gained a great reputation as a teacher among the students. As he rose to the higher ranks he held steadily to the same policy, and was one of the most unselfish and devoted servants that the school has ever had.

Two great changes took place in our time. The first was the abolition of the share system, and the payment by definite rates for the work done. This was the consequence and the condition of a grant from Government, given, I think, at that time by the Board of Education. The second, which came later, was the closer connexion of the school with the University. To both of these changes Bowlby lent an active support. The second was a remarkable instance of his sagacity, for he had no connexion with the University, which at that time was highly unpopular in the schools. He foresaw that it would raise the academic status of the school, and that was enough.

In the middle of this movement he and I went out to the war. There he was attached to G.H.Q. and had, as his main duty, the supervision of the clearing stations. They were a formation organized since the Boer war, and as yet untried in practice. No one knew exactly what their task would be. The stationary conditions of the war in France settled the question for that front. The dreadful nature of the injuries required immediate surgical aid, and the clearing stations became first-class hospitals, where surgery of the most advanced and daring kind was made possible first by provision of the necessary equipment, and later by the drafting of every available surgeon, sometimes, I am afraid, even to the detriment of the base, to the seat of fighting at the time. The clearing stations never, of course, took the place of the base. They did, however, the work necessary at the moment, the immediate repair of injuries which must otherwise have proved fatal before the patient could reach the base. It is not more than the truth to say that in this development Bowlby was the guiding spirit.

Perhaps I may be allowed a few words of personal tribute. Bowlby and I worked together for forty years. During the whole of that time I will not say that we never differed, but we never differed on serious points, and our friendship never was interrupted for a moment. We lived together in France for four years and a half, and I am sure that during the whole of that time we never said a cross word to one another. I remember the only time that I ever saw Bowlby really depressed. It was when the 5th Army were being forced back in 1918. The news grew worse and worse, and at last one Monday we received orders to prepare to fall back. We were then quartered at Hesdin. That night we sat over the fire and I think we were both very nearly crying. The next morning we were told to await further orders, and on Wednesday we were ordered to stay where we were.

Bowlby was the best collector of news I ever knew. Every night he brought back stories of the fights, statistics of losses, and the gossip of the front. Our companionship at the front was one of the most interesting episodes of my life.

Sir FREDERICK ANDREWES writes:

Sir Anthony Bowlby was, first and foremost, a surgeon, but he was also, as his writings testify, a good pathologist. It might be said that with him surgery and pathology were one subject, and that he was a good surgeon because he was a good pathologist. His knowledge of pathology, moreover, was not mere book knowledge, but was the fruit of his own observation and research. His opportunities had been great, for he had been trained in the school of surgical pathology at St. Bartholomew's Hospital started by Stanley and carried on by Paget and Savory, and in place of the dissecting rooms it was the museum and the post-mortem table which led him to the hospital staff. As curator of the museum he had to examine the material from the operating theatres, and thus laid the foundation of his accurate knowledge of morbid histology. On relinquishing his post in the museum he became surgical registrar (there was but one in those days), and, as such, he performed all the surgical post-mortems at the hospital. It was of these exceptional opportunities that Bowlby took full advantage, and it is not too much to say that upon these he built much of his surgical success.

While others knew him chiefly as a surgeon, I was associated with him mainly on the pathological side, and this association lasted for more than forty years. I was a student at St. Bartholomew's when Bowlby was surgical registrar, and I can well recall the benefit I derived from his teaching. He was a born teacher, and no trouble was too great for him to take where the welfare of the students was concerned. It was he, I believe, who instituted the weekly demonstrations on the surgical post-mortem specimens which had been obtained during the preceding week, and it was he, in conjunction with the late Sir Norman Moore, then medical registrar, who instituted the systematic teaching of morbid histology in the hospital. The class was held in the physiological laboratory every Friday at 4.15 p.m., and it so continued, though afterwards in other hands, for nearly forty years. Four students, of whom I was one for several sessions, were appointed as "cutters." We cut with an old-fashioned freezing microtome, stained the sections, and gave them out to the students in clove oil. We cut a great deal more material than was ever given out to the class, and we learned proportionally more. Bowlby would come to go over our sections with us once a week, apart from the class teaching, and I well remember how highly we valued these demonstrations. It was about this time that Bowlby produced his little book on *Surgical Pathology*, characteristically dedicated to the students of St. Bartholomew's Hospital. The feature in this work upon which he always laid special stress was its "clinical" character. It taught the student just the sort of pathology which helped him in his surgical work; it was pathology and surgery in one, and that was

perhaps the reason for the book's success, for it has had a much longer life than most works of the sort. Although Bowlby had to seek the help of coadjutors in the later editions, he always strove to maintain the clinical character of the book unaltered. It was largely owing to Bowlby's prescience that Kanthack was appointed as whole-time pathologist at St. Bartholomew's in 1893; he it was who proposed the change and carried it in the face of a good deal of opposition; it was a new departure, for no hospital in London then had a pathological specialist on its staff.

As a pathologist Bowlby, trained as he had been in the old school, was naturally a morbid anatomist and histologist; but during his career as a surgeon he witnessed the steady development of clinical pathology and bacteriology, witnessed it with his eyes wide open, and was ready to take full clinical advantage of all that it had to offer. For he never became a fossil, and those who came into contact with him during the last and greatest work of his life, during the war, saw clearly how greatly his success in organizing the treatment of the wounded was based on his readiness to accept new pathological ideas.

Sir CUTHBERT WALLACE writes:

I first remember Bowlby at a time when I was a commencing student and he had his feet on the ladder up which he climbed so far. I remember him in his home at Maida Vale, and also as a keen and energetic climber of the Swiss mountains in company with his friend Stedman. He seemed a long way above myself, and I often turned to him for advice. In the autumn of 1899 he asked me to join the staff of the Portland Hospital, and with him I sailed from Liverpool in the *Majestic*. We worked together, at first at Rondebosch and later at Bloemfontein, until the hospital was broken up in July, 1900. It was during this time that I first became aware of his power of dealing with difficult situations and smoothing out differences. It is remarkable that he had this faculty, as he was a man of very definite opinions, whether they were right or wrong. It was this downright attitude of mind that made him a successful teacher. During the years that followed the Boer war our friendship continued, and I was often a guest in his home in Manchester Square.

In May, 1915, I was handed over to him at St. Omer to be introduced to my new duties. He remained at General Headquarters, and, in addition, looked after the 2nd Army, while I was attached to the 1st Army. There then began a period of close companionship and consultation which lasted till the end of the war. With the establishment of additional armies new consultants were appointed, and Bowlby became a superconsultant and general adviser at the front. His work entailed a life spent in a motor car, traversing great distances, over roads which were not first-rate. It was a matter of surprise and admiration how he stood up to the strain in all weathers and in all seasons. He was always cheerful, always welcome, and always full of news. He was constantly on the look out to circulate knowledge, and to think out and suggest administrative adjustments. Often after a strenuous day he would sit down and indite memoranda and reports. The wounded man owed him a lot.

Bowlby had a conservative turn of mind. On the other hand, if he was once convinced that any project was good he would push it with all his might. He was a good man to have on your side, if you could persuade him to join you. Another striking attribute was his power of extracting the essence of a subject and his ability to disregard inessentials. He was a counsellor who almost invariably strove for peace. He was a good friend, and many will miss him.

Lieutenant-General Sir ARTHUR SLOGGETT, who was Director-General A.M.S. from 1914 to 1918, sends the following tribute:

I first met Bowlby when he was in charge of the Portland Hospital during the South African war. There he did very good work indeed, and from that time began his connexion with the British Red Cross Society. When the European war broke out I was extremely anxious to obtain his services as consulting surgeon in France. My desires were fulfilled; I made him consulting surgeon for the whole of the front line, and my friend Sir George Makins was consulting surgeon for the whole of the lines of communication. Bowlby was of the very greatest help to me throughout the war. When I first went to France the relations between the R.A.M.C. and the civilian surgeons in the Red Cross organization were by no means free from friction. I met the situation by giving all the medical officers rank, so that they became, as it were, one family. The possibilities of quarrel thus disappeared, the whole service worked together as one, and it was, to use Bowlby's own frequent words, "a very happy show." In securing this most essential condition for the efficiency of the service at the front I owed much to Bowlby himself. Behind his somewhat gruff exterior he had admirable qualities of tact and a great wisdom in dealing with men. At our headquarters, which were first at St. Omer and afterwards at the village of Hesdin, in the Pas-de-Calais, we worked together in the most intimate way, and in all our association, official and personal, then and afterwards, in times of great exigency and in times of waiting, we never developed any disagreement.

Bowlby's surgical skill was, of course, of a very high order. He was immensely painstaking in everything he did, and he possessed enormous vitality and physical strength. He could take on a vast amount of work and carry it through without visible signs of fatigue. He often amazed me by his untiring energy. I was always an "early bird" myself, but here was Bowlby very often up and "on the warpath" in front of me, going his rounds of inspection. One interest we had in common was a love of cricket. I have been a member of the M.C.C. for the best part of half a century, and one of my pleasures was to get seats for Bowlby at Lord's on the occasion of the big matches. I do not know that he had ever played very much cricket himself, but he had a keen appreciation of the game. He played the game of life in the same clean way. One other personal association which I treasure was his armistice dinners. It was his custom every year since the war to give a dinner on November 11th to all the leading surgeons who were at the front with him. I never missed attending one of those gatherings. Alas, that there should be no more of them!

I may add that the King had a great regard for his honorary surgeon. In his visits to the front His Majesty would inquire after Bowlby with a turn of speech which showed his affection for the man. That was a feeling, indeed, which any who really knew him must have shared. He was a man's man, with a chest of iron and a heart of gold.

Major-General Sir S. G. GUISE-MOORES writes:

It was in the South African war of 1900–2, when Sir Anthony Bowlby had surgical charge of the Portland Hospital, that I first came across him. Then not again until after a long interval—in 1915 during the great war. He was at the time the advisory consulting surgeon to the British Expeditionary Force in France. Both he and Sir Wilmot Herringham came as consultants to the Belgian Enteric Hospital for civilians at Malassise, near St. Omer, of which I was the officer commanding. Sir Wilmot, as consulting physician to the British Expeditionary Force, visited it regularly, and brought Sir Anthony Bowlby with him as occasion demanded, for at times there were important surgical cases on our hands requiring an expert opinion. But it was when director of medical services of the 2nd Army that, apart from his reputation as a surgeon, I learnt to value and appreciate the man himself, his qualities of mind and heart, and his strong and virile personality. He had been known to follow, by his presence, wounded from the field ambulance, advance and main dressing stations, to the clearing stations, and, when the spirit prompted him, to go right up to the regimental aid posts. At the clearing stations he was a frequent visitor, and soon became the prime mover in regularizing improvements in surgical procedure and technique, in relation to the treatment of wounds at the front. He was also the promoter of harmonious co-operation between the military and civilian elements, which contributed so much to the efficiency of the growing number of the elaborate clearing stations that lay behind the lines. We always looked

forward to his timely visits to D.M.S. headquarters, for he was the most sensible of optimists, and the most loyal of colleagues; a breezy wave of confidence seemed to usher him into its portals. His decisions were formed on sound reasoning, but if by any chance he afterwards found that error had crept in, he was the first to recognize and acknowledge it.

He was on the staff of Osborne House, and of late years it has been my good fortune to welcome him on his week-end visits. This fuller intimacy enabled one to recognize the many-sided facets to his character, his singleness of purpose, and his set duty, to help others, particularly the ex-soldier, in surmounting the uphills of life. The thought, time, and labour he gave for the betterment of the fighting man in the war will ever be gratefully remembered. It is possible that Sir Anthony counted the years of his army service in South Africa and France as among the happiest in a career full of honour. There is no doubt that from the start he had implanted in his being the seeds of an administrator, and that these fructified in full measure in an atmosphere so suited to his abilities and so congenial to his temperament.

[The photograph of Sir Anthony Bowlby reproduced at page 747 is by Elliott and Fry, London.]

SAMUEL HERBERT BURTON, M.B., F.R.C.S.,

Consulting Surgeon to the Norfolk and Norwich Hospital, and the Norfolk and Norwich Eye Infirmary.

WE regret to announce the death of Mr. S. H. Burton in his seventy-sixth year, at his residence in Norwich, on March 30th.

Samuel Herbert Burton received his medical education at University College Hospital, graduating M.B., B.S.Lond., with honours in medicine and midwifery in 1876, in which year also he obtained the diploma M.R.C.S.; in 1881 he became F.R.C.S. by examination. After holding the posts of house-surgeon, house-physician, surgical registrar, demonstrator of pathology, and assistant in the obstetrical and ophthalmological departments at University College Hospital, he was appointed house-surgeon to the Norfolk and Norwich Hospital in 1878. Ten years later he became assistant surgeon, in 1898 full surgeon, and in 1919 consulting surgeon. His administrative ability was recognized by his election as chairman of the Board of Management in 1923. In addition to these appointments he was also consulting surgeon to the Jenny Lind Hospital for Children, and surgeon to the Eye Infirmary; until his death he was chairman of the Infirmary committee.

Mr. Burton was a member of the British Medical Association for many years; he was vice-president of the Section of Surgery at the annual meeting in 1900 at Ipswich, and in 1909 held office as chairman of the Norwich Division. He was a justice of the peace for Norwich. He was in active practice until within a short time of his death, and had a distinguished reputation as an operator and accoucheur. In February he had a severe attack of influenza and pneumonia, but recovered sufficiently to resume work. A little later, however, following a relapse, he died after a short illness. He is survived by his widow, two sons, and two daughters.

A colleague writes: It is a high tribute to his professional success to say that Burton was not only a first-class general practitioner but also a hospital surgeon of exceptional ability. The combination is rare in these days of specialism, and those who maintain that every consultant should have had experience of general practice would find in Burton's career a strong argument in support of that contention. The thorough grounding in the science of surgery which his early appointments gave him enabled him to take full advantage of the large and varied clinical experience which his hospital and private practice afforded. But he owed as much to his personal qualities as he did to his training. Careful and painstaking in forming an opinion, firm in holding it, temperate in expressing it, always ready to listen to the views of others, an indefatigable worker — it is little wonder that his influence with his colleagues and the hold he had over his patients were great, and that the members of the hospital boards on which he served always listened to him with attention and confidence. Few men have seen more of the frailties of mankind; few have gained a deeper knowledge of human nature; yet he was never cynical, and he never forgot that his patient was first of all a human being. The Norfolk and Norwich Hospital owes him a great debt. Its interests to him were paramount, and he served it well and skilfully, both as a surgeon and as an administrator. It can be truthfully said of him that he was one of those who "were honoured in their generation."

The sudden death of Dr. WILLIAM LOUIS BYHAM, on March 19th, at his residence in Sunbury-on-Thames, caused a painful shock to his many friends. He had been actively engaged in professional duties during the day, but about 11 p.m. he suddenly collapsed and died. Dr. Byham joined St. Thomas's Hospital as a medical student in 1879, and obtained the diplomas L.R.C.P., L.R.C.S.Ed., L.R.F.P.S.Glas. in 1886; he then spent three years as a medical officer on board ship, visiting China, Japan, South Africa, and the West Indies. After this he practised at Spalding for seven years, and subsequently at Sunbury-on-Thames. In 1907 he was appointed medical officer of health to the Sunbury Council in succession to Dr. Palgrave, and he was also medical officer to the Staines Union, the Post Office, the Meropolitan Water Board, and the Sunbury Orphanage. During the war he was medical officer to the large depot of the R.A.S.C. at Kempton Park, and did much work for local members of the profession who were called up for duty with the Forces. He leaves a widow, a son, and a daughter. A colleague writes: Byham was a man of unusually good physique, and in his earlier life was known in Rugby circles as a stalwart forward; he was also a good cricketer, and an all-round sportsman. Although a very busy man during recent years, he was never too much occupied to listen to the story of the poorest patients, and his thoughtful cheery manner endeared him to all with whom he came in contact. The funeral service, on March 23rd, was largely attended by sorrowing friends of all ages, and was remarkable for the many beautiful wreaths.

The death of Alderman Dr. ARTHUR WILSON CHAPMAN, J.P., of Manchester, has removed one of the best-known figures in the public life, both medical and civic, of that city. Dr. Chapman was born in Birmingham in 1862, and went to Manchester as a boy. He was educated at St. Margaret's and the Grammar School, and graduated M.B., C.M. at Aberdeen University in 1886. Shortly afterwards he became immersed in general practice in Manchester, and rapidly built up a wide connexion, mainly in an industrial district. This, however, could not absorb all his energies, and in 1901 he was elected to the city council, becoming alderman in 1915. Here he interested himself in public health and infant welfare work, and more particularly in the tramway service, which he always spoke of as his chief hobby. In the medical world, among other offices, he held those of chairman of the Manchester Division of the British Medical Association for seven years; chairman of the Manchester Medical and Panel Committees for eleven years; and council representative on the Manchester Insurance Committee for fifteen years. In his student days he was well known as a Rugby football player, and a boxer above the average; in later years he was interested in lacrosse, becoming president of the North of England Lacrosse Association and other clubs. A journalist of no mean ability, a pronounced "family man," a lover of animals, his interests could scarcely have been wider, and in all his contacts with life Arthur Chapman earned and received not only the esteem but also the very real affection of all who knew him. To his intimates, and to them only, it was known that the latter years of his life were passed under the handicap of illness severe enough to have crippled any lesser man; but this was faced with courage and cheerfulness, and his zeal for work and service lasted to the end. The local profession has lost a great friend.

Medical News.

THE centenary of the Zoological Society of London will be celebrated on Monday, April 29th. A commemorative meeting will be held at 5 p.m. in the great hall of University College, followed by a dinner in the Gardens of the Society in Regent's Park.

THE annual luncheon of the Irish Medical Schools' and Graduates' Association will be held at the Queen's Hotel, Piccadilly, Manchester, on Wednesday, July 24th, at 1 o'clock sharp. Tickets, price 4s., may be obtained from the honorary secretary for the provinces, Dr. Falkland L. Cary, 67, King's Road, Harrogate. All Irish graduates, whether members of the association or not, are invited to attend the luncheon. The honorary secretary requests that applications for tickets may be sent to him as early as possible before the date of the meeting.

THE twelfth and last of the annual series of Sims Woodhead Lectures in connection with the People's League of Health Travelling Scholarship will be delivered to-day (Friday, April 19th) at 6 p.m., at 11, Chandos Street, Cavendish Square, W., by Dr. C. C. Worster-Drought, on the subject of decay and disease, natural and premature.

AT the next meeting of the Royal Sanitary Institute, to be held on Friday, April 26th, at 3 p.m., in the City Hall, Cardiff, discussions will take place on the new Local Government Act, on town planning, and on the proposed reconstruction, widening, and lowering of Cardiff Bridge.

THE annual meeting of the Medical Mission Auxiliary of the Church Missionary Society will be held in the Central Hall, Westminster, S.W., on Wednesday, May 1st, at 7.15 p.m. Tickets of admission may be obtained from the Superintendent, Loan Department, Church Missionary Society, Salisbury Court, E.C.4. A small number of reserved seats at 1s. each are available.

A DISCUSSION on the sterilization of the unfit will be opened by Lord Riddell at a meeting of the Medico-Legal Society, at 11, Chandos Street, W.1, on April 25th, at 8.30 p.m.

THE annual general meeting of the Tavistock Square Clinic for Functional Nervous Disorders will be held in the form of a luncheon party at the Hotel Russell, Russell Square, W.C.1, on Monday, May 6th, at 1.10 p.m.; Sir F. J. Willis will preside. The honorary director, Dr. H. Crichton-Miller, and the treasurer will present brief reports, and plans for the extension of the work of the clinic will be discussed.

THE Dr. Jessie Macgregor prize for medical science will be awarded next July to the applicant who presents the best record of original work in the science of medicine. This work may be unpublished or published, but in the latter contingency must not have been published earlier than three years before the month of July, 1929. The prize is of the value of £75, and is open to women who have graduated in medicine in the University of Edinburgh, or have taken the triple qualification, and who will have previously studied medicine for at least one year in Edinburgh. The successful applicant shall within three months of the award deliver a lecture to the medical profession in Edinburgh on the subject for which the prize has been awarded. Applications, marked "Dr. Jessie Macgregor prize in medical science," must reach the Convener of Trustees, Royal College of Physicians of Edinburgh, not later than May 31st.

LORD DAWSON OF PENN will distribute the prizes and certificates to students of the London Hospital Medical College (University of London) on Friday, June 28th.

THE first course for the M.R.C.P. diploma organized by the Fellowship of Medicine will extend from May 7th to June 28th, and consists of sixteen lectures by well-known authorities on Tuesdays and Fridays, at 8.30 p.m., in the lecture hall of the Medical Society of London, 11, Chandos Street, Cavendish Square. Two courses are now in progress: one in medicine, surgery, and gynaecology, at the Royal Waterloo Hospital, will conclude on May 4th, and the other in neurology, at the West End Hospital for Nervous Diseases, and consisting of lecture-demonstrations at 5 p.m. each day, will finish on May 10th. A comprehensive course begins on April 29th in diseases of the throat, nose, and ear at the Central London Throat, Nose, and Ear Hospital, and continues for three weeks. Starting also on April 29th is a month's course in psychological medicine at the Maudsley Hospital. From May 6th to June 1st a course in venereal diseases will be conducted at the London Lock Hospital. From May 2nd to June 1st the London School of Dermatology will hold a special course consisting of clinical instruction and formal lectures. Practical pathological demonstrations can be arranged if desired. From May 27th to June 8th an afternoon course, under the direction of Dr. Eric Pritchard, will be held at the Infants Hospital. Detailed syllabuses of the foregoing courses, information relating to the general course of work at the various London general and special hospitals, and copies of the *Post-Graduate Medical Journal* may be obtained from the Secretary of the Fellowship, 1, Wimpole Street, W.1.

THE Central Midwives Board for England and Wales met on April 4th, with Sir Francis Champneys in the chair. The standing committee reported that it had appointed the following to be members of the Approvals Subcommittee: Miss A. Davies, Miss E. M. Doubleday, Dr. J. S. Fairbairn, Miss E. E. Greaves, Dr. R. A. Lyster, Miss A. A. I. Pollard, and Mrs. E. Richmond. Approval for the year ending March 31st, 1930, was given to the list of examiners, the list of lecturers and institutions where lectures may be delivered, and the list of institutions, homes, and midwives at which, or under whom, midwives may be trained.

As announced in our advertisement columns, applications are invited for the Dickinson Pathology Scholarship and for the Dickinson Travelling Fellowship in Medicine. Candidates for the former, value £75, must have received their full course of instruction in pathology, medicine, and surgery at the University of Manchester and the Manchester Royal Infirmary. The Travelling Fellowship is of the value of £300, and candidates must have taken out the full course of clinical instruction required by their examining bodies in the Manchester Royal Infirmary and the University of Manchester. The scholarships are both tenable for one year. Full particulars and a copy of the regulations may be obtained from Mr. F. G. Hazell, secretary to the trustees, Manchester Royal Infirmary, to whom applications must be sent by May 2nd.

THE issue of *Medizinische Klinik* for March 28th is dedicated to the memory of the distinguished Viennese surgeon, Theodor Billroth, on the occasion of the celebration of the centenary of his birth on April 26th, 1829, and contains articles on him by Professor G. Lotheissen, and also Drs. I. Fischer and K. Feri of Vienna and Professor W. Körte of Berlin.

THE March issue of *The Mission Hospital*, published by the Church Missionary Society, London, is devoted to maternity and child welfare, and contains accounts of the progress being made in this respect under the auspices of the society in different parts of the world, including China and Southern and Central Africa.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

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The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

LORD LISTER.

"J. S. R." asks if any reader can tell him where he could obtain a small bust of the late Lord Lister.

INCOME TAX.

Succession followed by Introduction.

"H. D. O." sold his practice as from December 31st, 1928, but remained acting, according to the agreement for sale, as assistant to the purchaser during the following three months. What adjustment can he claim, and what is his liability—if any—for the year 1929–30?

*** We assume that the practice was a "sole" practice. Our correspondent can have his liability for the year ended

April 5th, 1929, reduced to the amount of his earnings for that year—for example, three-fourths of the 1928 profits *plus* the "assistant" earnings for the last three months—but is liable, on the other hand, to have the assessment for the year to April 5th, 1928, adjusted, if the Revenue desire it, to the amount of the earnings for that year. As regards 1929-30, he will apparently have ceased his connexion with the practice, and will not be liable to an assessment for proceeds thereof—cash receipts coming to hand after December 31st, 1928, represent the harvesting of income the liability for which has been accounted for as it was being earned.

Expenses of Research incurred by Lecturer.

"CH.M." holds a University appointment; the regulations provide that he "shall be expected to engage in higher study and research." The research programme was apparently discussed with the Dean of the Faculty, and definite instructions were given by him as to the work to be done and places to be visited for that purpose. "Ch.M." incurred expenses amounting to £54 in carrying out those instructions, and has had the deduction of that amount from his assessable emoluments refused after a personal appeal to the General Commissioners.

*** In our opinion this is a borderline case, and we are not clear that "Ch.M.'s" claim is well founded in law, especially as it is not shown that the Dean has the legal right of prescribing precisely what work is to be done without the volition of the lecturer. Expenses wholly, exclusively, and necessarily incurred in fulfilling the condition attached to the appointment would be allowable, but other purposes are also served—which makes the "exclusively" an awkward stipulation—and it is possible that "Ch.M." might have adopted some less expensive means of research. The technical points mentioned by "Ch.M." we do not regard as of much moment; an appeal cannot be made to the Special Commissioners, as that body is alternative to the General Commissioners, and not a superior tribunal, and the only steps "Ch.M." can take now for the year in question is by way of appeal to the High Court on the point of law. He might be well advised to protect his right to do so by paying one guinea to the Clerk to the Commissioners with a request for a statement of the case. When he receives the case he can better decide whether it will be worth his while to incur further expense in the matter.

Motor Expenses Exceed Allowance.

"H. A. C." has to have a car for use in connexion with his work as district tuberculosis officer. He receives an allowance at the rate of 5d. per mile, but, owing in the main to rather frequent renewals of his car, his actual expenses, including depreciation, loss on exchange, etc., have been in excess of the amount so calculated. Can he claim to deduct that excess for income tax purposes?

*** He will have to prove that the excess was expended out of his salary wholly, exclusively, and necessarily in the performance of his duties. In effect this implies that the 5d. per mile allowance is inadequate; the special and apparently rather unfortunate circumstances of his case are difficult to introduce in view of the word "necessarily," and we cannot but consider his chance of success in proving that inadequacy to be somewhat slight.

LETTERS, NOTES, ETC.

PUBLIC HEALTH CONGRESS IN ZÜRICH.

DR. E. W. HOPE and Dr. T. N. KELYNACK (honorary secretaries, Royal Institute of Public Health, 37, Russell Square, W.C.1) write: The preliminary programme for the 1929 Zürich Conference of the Royal Institute of Public Health, May 15th to 20th, has now been issued and a copy can be forwarded on request. We are assured of the most cordial welcome by the Swiss National Government, the authorities of the canton, city, and the University of Zürich, and by the leaders of the medical school of Zürich. Invitations have also been received to visit various health stations in Switzerland. The Government gives a concession of 50 per cent. on the State railway; free transportation will be provided on the Rhaetian Railway (Chur to Davos) and on the railways Chur to Arosa, Sierre to Montana, and Aigle to Leysin. The local authorities at each of these well-known centres are most anxious to welcome as many members of the congress as possible. We are further assured by the Czechoslovak Minister, Mr. Jan Masaryk, of a hospitable reception for those who may find time after the congress to extend their journey to the two great Czechoslovak spas of Carlsbad and Marienbad. In order to complete arrangements for the comfort of members of the congress desiring to participate in the extensions, it is essential that we should know immediately which of the visits members will desire to take. Particulars regarding the extensions and the routes to be traversed, together with information as to the expenses to members of the congress, will be forwarded on application; non-members may accompany members, but will not be able to enjoy all the special privileges. The inclusive cost of the visit to the congress at Zürich will range from £10 4s. 6d. for the short sea route, second-class travel on the Continent and hotel accommodation, to £12 12s. 6d. for first-class travel throughout and hotel accommodation. Full particulars regarding the different extended journeys available after the conference, together with a list of the various hotels in Zürich, are available on demand, and it is earnestly requested that all who propose to attend the conference will communicate with us as soon as possible.

POISONING FROM EXHAUST FUMES.

"M.D., B.S." (London, W.1) writes: The recent fatal accident that arose from the driver of a public motor vehicle being momentarily overcome by drowsiness makes one wonder what precautions are taken, and what authority, if any, is responsible for their enforcement, to protect drivers, and through them, their passengers and other road users, from conditions leading to such accidents. The average doctor is a motorist of necessity, and many of us know only too well how almost hypnotic may be the effect of long driving on a tired brain and how easy it is to be overcome by momentary sleep, even in an open car with the wind blowing freely round the screen. If engine fumes are added, how intensely might this drowsiness be increased! In some motor buses, as I can personally testify, engine fumes may be markedly noticeable even to a passenger seated by an open window. How much more potent must they be in an ill-ventilated cabin, where the engine "breather" may be situated immediately below the driver's feet! Our factories and workshops are subject to strict inspection for the sake of the health of the employees. Is there any inspection of the conditions under which a bus driver works—conditions which may concern not only his own health, but also the safety of his passengers and other road users? If so, why does one hear, at least in some provincial districts, of men driving for three and four consecutive "long days," with only four hours' sleep between? Why does one hear of these men staggering from their driving cabins and clinging to some support at the roadside while they breathe in fresh air to relieve the uncontrollable drowsiness and giddiness which attacks them, and of others who have to "go sick" with gastro-intestinal attacks and other symptoms referable to exhaust gas poisoning? Perhaps some readers of the *Journal* may be able to mention cases they have treated of exhaust gas poisoning in public vehicle drivers.

PAINFUL SHOULDER.

"PODAGRA," continuing this discussion, which began with Mr. P. B. Roth's letter on December 22nd, 1928 (p. 1156), writes: Being one of the many elderly fellow-sufferers, I quite agree with "T. F." (March 16th, p. 534) as to the improbability of it being due to synovitis, there being no obvious signs of inflammation in the shoulder-joint. I could not raise my elbow, which was trying this side of the Atlantic; as to getting my hand into my trousers pocket, that I must admit has always been an inherent difficulty, for I keep my small change there. I also have the pain and occasional tenderness over the insertion of the deltoid, but it should be remembered that the insertions of the teres major, latissimus dorsi, and pectoralis major are in the bicipital grove, which is immediately above and beneath the deltoid. The action of this group of muscles is to rotate the humerus inwards and bring it to the side; now if, owing to the sudden contraction of this group of muscles, any of the fibres are torn, together with their sensory nerve endings (muscle spindles), a traumatic fibrositis is set up, similar to lumbago. The treatment I am undergoing, after subjecting the painful area to radiant heat, is forcible extension, advocated by Romer years ago. After half a dozen sittings my movement has been considerably increased and the pain lessened.

ANAESTHESIA FOR COLLES'S FRACTURE.

DR. WILLIAM HAIG (Crieff, Perthshire) writes: In his letter in the *Journal* of April 13th (p. 705) Mr. C. H. Fagge says "it must, however, be admitted that in some cases of Colles's fracture in elderly and infirm women a bad result is preferable to the risk which a general anaesthetic would entail." I wonder if he has considered the use of "twilight sleep" as a substitute for the general anaesthetic. In two such cases recently—both women over 70—I injected a sterile solution of tabloid hyoscine compound B and left to continue my visits elsewhere; when I returned, on each occasion within a couple of hours, I found the patient sufficiently anaesthetized and relaxed to enable me to set the fracture satisfactorily.

CAUTION.

ON April 3rd, 1926 (p. 640), and again on August 27th, 1927 (p. 372), the *British Medical Journal* cautioned readers against begging letters from a Mrs. E. M. Etheridge. From recent information received it appears that Mrs. Etheridge is continuing to write to members of the medical profession, and they are strongly advised to forward such begging letters to the secretary of the Charity Organization Society, Denison House, Vauxhall Bridge Road, London, S.W.1.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 46, 47, 48, 49, 52, 53, and 54 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 50 and 51.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *151*.

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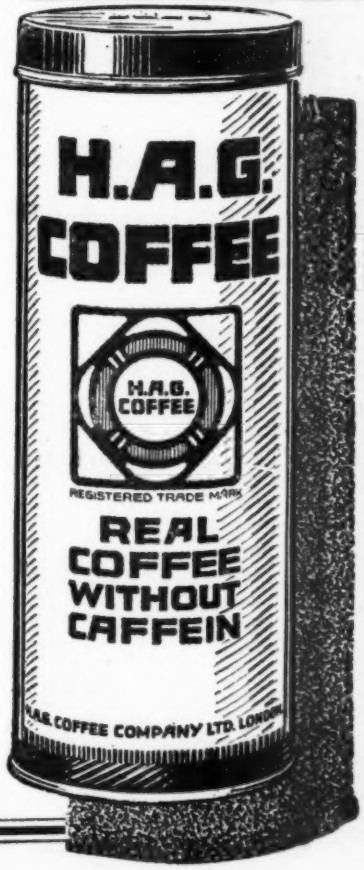

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